SEW EURODRIVE

Operating Instructions

MOVIFIT® basic

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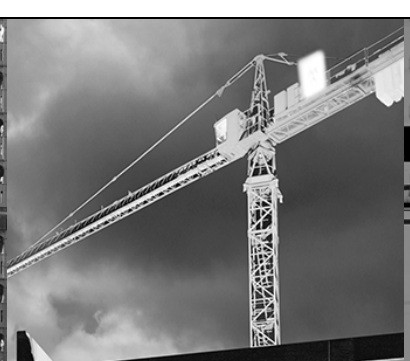

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Contents

1 General Information 5
1.1 How to use this documentation 5
1.2 Structure of the safety notes 5
1.3 Rights to claim under limited warranty 6
1.4 Exclusion of liability 6
1.5 Copyright 6
1.6 Product names and trademarks 6
2 Safety Notes 7
2.1 Preliminary information 7
2.2 General information 7
2.3 Target group 7
2.4 Designated use 7
2.5 Other applicable documentation 8
2.6 Transportation, storage 8
2.7 Installation 8
2.8 Electrical connection 8
2.9 Safe disconnection 9
2.10 Operation 9
3 Unit Structure 10
3.1 MOVIFIT® basic 10
3.2 Variants 10
3.3 Accessories 11
3.4 Type designations 12
4 Mechanical Installation 13
4.1 Installation instructions 13
4.2 Mounting position 14
4.3 Installing MOVIFIT® basic 14
5 Electrical Installation 15
5.1 Installation instructions 15
5.2 Topology 18
5.3 Power bus connection (line cable) 19
5.4 Motor connection 24
5.5 Control unit connection 28
5.6 Connections of MOVIFIT® basic with AS-Interface 29
5.7 Connections of MOVIFIT® basic with binary control 31
5.8 Connection of LT-BG keypad 33
5.9 PC connection 34
6 Startup 35
6.1 Important startup notes 35
6.2 Requirements 36
6.3 Startup procedure for the MOVIFIT® basic inverter 37
6.4 MOVIFIT® basic motor starter – startup procedure 39
6.5 Assigning the AS-Interface slave address 40

6.6 Parameterization with LT-BG keypad 42
6.7 Parameterization with the PC 44
6.8 Parameter directory of the MOVIFIT® basic inverter 45
6.9 Functions of MOVIFIT® basic with AS-Interface 49
6.10 Functions of MOVIFIT® basic with binary control 50
7 Operation 51
7.1 Operating displays (LEDs) 51
7.2 Operating displays of LT-BG keypad 52
7.3 Manual mode with LT-BG keypad 53
7.4 Manual mode with the PC 55
8 Service 58
8.1 Diagnostics with LT-BG keypad 58
8.2 Error list of MOVIFIT® basic 59
8.3 Inspection/Maintenance 60
8.4 Shutdown 61
8.5 Storage 61
8.6 Extended storage 61
8.7 Disposal 61
9 Technical Data 62
9.1 CE marking, UL approval and C-Tick 62
9.2 MOVIFIT® basic with AS-Interface 63
9.3 MOVIFIT® basic with binary control 65
9.4 Accessories 66
9.5 Dimension drawings 67
10 Declaration of Conformity 68
11 Address List 69
Index 70

1 General Information

1.1 How to use this documentation

The documentation is an integral part of the product and contains important information on operation and service. The documentation is written for all employees who assemble, install, startup, and service this product.

The documentation must be accessible and legible. Make sure that persons responsible for the system and its operation, as well as persons who work independently on the unit, have read through the documentation carefully and understood it. If you are unclear about any of the information in this documentation, or if you require further information, contact SEW-EURODRIVE.

1.2 Structure of the safety notes

1.2.1 Meaning of the signal words

The following table shows the grading and meaning of the signal words for safety notes, notes on potential risks of damage to property, and other notes.

Signal word	Meaning	Consequences if disregarded
⚠ **DANGER**	Imminent danger	Severe or fatal injuries
⚠ **WARNING**	Possible dangerous situation	Severe or fatal injuries
⚠ **CAUTION**	Possible dangerous situation	Minor injuries
NOTICE	Possible damage to property	Damage to the drive system or its environment
INFORMATION	Useful information or tip: Simplifies the handling of the drive system.	

1.2.2 Structure of the section-related safety notes

Section safety notes do not apply to a specific action, but to several actions pertaining to one subject. The used symbols indicate either a general or a specific hazard.

This is the formal structure of a section safety note:

⚠ SIGNAL WORD

Type and source of danger.

Possible consequence(s) if disregarded.

- Measure(s) to prevent the danger.

1.2.3 Structure of the embedded safety notes

Embedded safety notes are directly integrated in the instructions just before the description of the dangerous action.

This is the formal structure of an embedded safety note:

- ⚠ **SIGNAL WORD** Nature and source of hazard.

  Possible consequence(s) if disregarded.

  – Measure(s) to prevent the danger.

1.3 Rights to claim under limited warranty

A requirement of fault-free operation and fulfillment of any rights to claim under limited warranty is that you adhere to the information in the documentation. Read the documentation before you start working with the unit!

1.4 Exclusion of liability

You must comply with the information contained in this documentation to ensure safe operation of and to achieve the specified product characteristics and performance features. SEW-EURODRIVE assumes no liability for injury to persons or damage to equipment or property resulting from non-observance of these operating instructions. In such cases, any liability for defects is excluded.

1.5 Copyright

© 2011 – SEW-EURODRIVE. All rights reserved.

Unauthorized duplication, modification, distribution or any other use of the whole or any part of this documentation is strictly prohibited.

1.6 Product names and trademarks

All brands and product names in this documentation are trademarks or registered trademarks of their respective titleholders.

2 Safety Notes

The following basic safety notes must be read carefully to prevent injury to persons and damage to property. The operator must ensure that the basic safety notes are read and adhered to. Make sure that persons responsible for the plant and its operation, as well as persons who work independently on the unit, have read through the operating instructions carefully and understood them. If you are unclear about any of the information in this documentation or if you require further information, please contact SEW-EURODRIVE.

2.1 Preliminary information

The following safety notes are primarily concerned with the use of drives. If you use other SEW components, also refer to the safety notes for the respective components in the corresponding documentation.

Please also observe the supplementary safety notes in the individual sections of this documentation.

2.2 General information

Never install or start up damaged products. Submit a complaint to the shipping company immediately in the event of damage.

During operation, drives can have live and bare parts as well as hot surfaces, depending on their enclosure.

Removing covers without authorization, improper use as well as incorrect installation or operation may result in severe injuries to persons or damage to property. Refer to the documentation for additional information.

2.3 Target group

Only qualified electricians are authorized to install, startup or service the units or correct unit faults (observing IEC 60364 or CENELEC HD 384 or DIN VDE 0100 and IEC 60664 or DIN VDE 0110 as well as national accident prevention guidelines).

Qualified personnel in the context of these basic safety notes are persons familiar with installation, assembly, startup and operation of the product who possess the necessary qualifications.

Any activities regarding transportation, storage, operation, and disposal must be carried out by persons who have been instructed appropriately.

2.4 Designated use

drives are components intended for installation in electrical systems or machines.

In case of installation in machines, startup of units (i.e. start of designated operation) is prohibited until it is determined that the machine meets the requirements stipulated in the Machinery Directive 2006/42/EC.

Startup (i.e. the start of designated use) is only permitted under observance of the EMC directive 2004/108/EC.

The units meet the requirements stipulated in the Low Voltage Directive 2006/95/EC. The standards given in the declaration of conformity apply to the units.

You must observe the technical data and information on the connection requirements as provided on the nameplate and in the documentation.

2.4.1 Safety functions

units may not perform safety functions.

2.4.2 Hoist applications

units are not designed for hoist applications.

2.5 Other applicable documentation

Note also the following documentation:

- "DR.71-225, 315 AC Motors" operating instructions

You can download or order this publication on the Internet (**http://www.sew-eurodrive.de**, under the heading "Documentation").

2.6 Transportation, storage

You must observe the notes on transportation, storage and proper handling. Comply with the requirements for climatic conditions stated in section "Technical Data".

2.7 Installation

The units must be installed and cooled according to the regulations and specifications in the corresponding documentation.

Protect the units from improper strain.

The following applications are prohibited unless the unit is explicitly designed for such use:

- Use in potentially explosive atmospheres.
- Use in areas exposed to harmful oils, acids, gases, vapors, dust, radiation, etc.
- Use in non-stationary applications with strong mechanical oscillation and impact loads; see section "Technical Data".

2.8 Electrical connection

Perform electrical installation according to the pertinent regulations (e.g. cable cross sections, fusing, protective conductor connection). For any additional information, refer to the applicable documentation.

For notes on EMC compliant installation, such as shielding, grounding, arrangement of filters and routing of lines, refer to chapter "Installation instructions". The manufacturer of the system or machine is responsible for maintaining the limits established by EMC legislation.

Protective measures and protection devices must comply with the regulations in force (e.g. EN 60204 or EN 61800-5-1).

A voltage test according to EN 61800-5-1:2007 chapter 5.2.3.2 is required for the drives prior to startup in order to ensure the insulation.

2.9 Safe disconnection

The units meet all requirements for safe disconnection of power and electronic connections in accordance with EN 61800-5-1. All connected circuits must also satisfy the requirements for safe disconnection.

2.10 Operation

Systems with integrated units must be equipped with additional monitoring and protection devices according to the applicable safety guidelines, such as the law governing technical equipment, accident prevention regulations, etc. Additional protective measures may be necessary for applications with increased potential risk.

Do not touch live components or power connections immediately after disconnecting from the supply voltage because some capacitors may still be charged. Wait at least 10 minutes after the supply voltage is switched off.

Once the supply voltages are applied to , the connection box must be closed, i.e. the cover must be screwed on and all the plugs must be connected.

The fact that the status LEDs and other display elements are no longer illuminated does not indicate that the unit has been disconnected from the supply system and no longer carries any voltage.

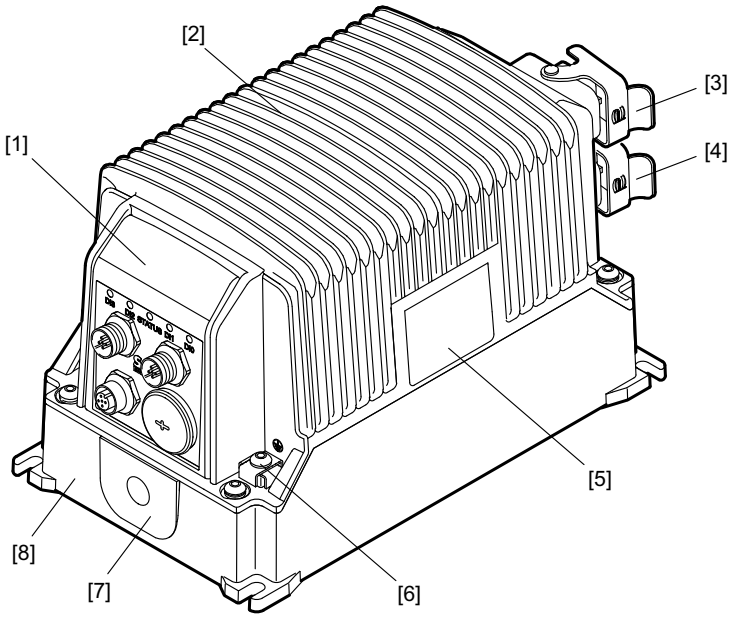
Mechanical blocking or internal safety functions of the unit can cause a motor standstill. Eliminating the cause of the problem or performing a reset may result in the drive restarting automatically. If, for safety reasons, this is not permitted for the driven machine, disconnect the unit from the supply system before correcting the error.

Caution: Danger of burns: The surface temperatures of the drives can exceed 60 °C during operation.

3 Unit Structure

3.1 MOVIFIT® basic

MOVIFIT® basic is a decentralized drive unit for controlling AC motors.



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[1] Control unit
[2] EBOX with cooling fins and electronics (inverter or motor starter)
[3] X8 connection for motor (only with dual motor starter design)
[4] X9 connection for motor
[5] Nameplate
[6] PE connection ⏚ (outside)
[7] Cable seal for cable diameter 13 – 15 mm
[8] ABOX with FieldPower contact module (connection unit)

3.2 Variants

MOVIFIT® basic is available in the following variants:

- Inverter — For 1 motor with CW and CCW operation and 4 setpoint speeds
- Dual motor starter — for 2 motors with 1 direction of rotation each (in preparation). The direction of rotation depends on the phase sequence.
- Reversing starter — For 1 motor with CW and CCW operation

MOVIFIT® basic is available with the following control units:

- Drives with AS-Interface
- Control unit with binary signal inputs and outputs

3.3 Accessories

You can order the following accessories for MOVIFIT® basic from the company Weidmüller Interface GmbH & Co. KG (see www.weidmueller.com):

Accessories	Part number (Weidmüller)
Cable seal, for cables with Ø = 7.5 – 9 mm	4329610000
Cable seal, for cables with Ø = 9 – 11 mm	4323210000
Cable seal, for cables with Ø = 11 – 13 mm	4323230000
Cable seal for cables with Ø = 13 – 15 mm [1]	**4323220000**
Cable seal, for cables with Ø = 15 – 17 mm	4324010000
Seal (without cable entry)	4323990000
Stripping tool AM 16 (for round cables)	9204190000
Stripping tool AMF 6/10 (for flat cables)	9204180000

1) The scope of delivery of MOVIFIT® basic units comprises 2 of those cable seals.

3.4 Type designations

3.4.1 Nameplate

The following figure gives an example of a nameplate of the MOVIFIT® basic inverter:

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3.4.2 Type designation

The following table shows the MOVIFIT® basic type designation:

MBF07A-K1-A1

Connection module

Version

Control
K = via AS-Interface
B = binary control

Version

Motor power/variant
07 = 0.75 kW inverter
15 = 1.5 kW inverter
4R = Reversing starter
4D = dual-motor starter (in preparation)

Design
F = Inverter
S = Motor starter

Unit series
MB = MOVIFIT® basic

4 Mechanical Installation

4.1 Installation instructions

4.1.1 General information

NOTICE

Loss of warranted degree of protection if the MOVIFIT® basic inverter is installed incorrectly or not at all.

Damage to the MOVIFIT® basic unit.

- If you remove the EBOX from the ABOX, you have to protect the EBOX and the ABOX from moisture and dust.

Note the following when installing the MOVIFIT® basic unit:

- Observe the general safety notes.
- Only install the MOVIFIT® basic unit on a level, low-vibration, and torsionally rigid support structure.
- Ensure sufficient clearance around the unit to allow for adequate cooling. Warm outlet air of other units must not be drawn in.
- Strictly observe all instructions as to the technical data and the permissible conditions regarding the place of installation.
- Do only use provided attachment options when mounting the drive.
- Cover the unused plug connectors with blind caps.

  The degree of protection specified in the technical data only applies for a correctly installed MOVIFIT® basic unit.

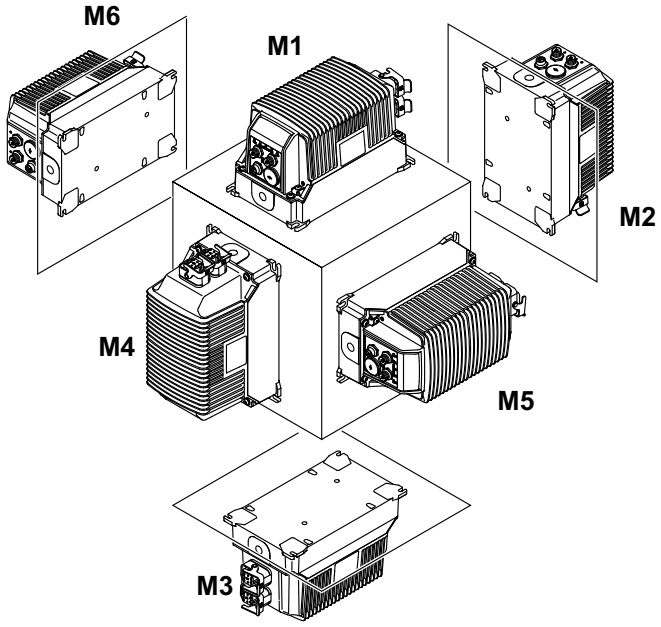
4.1.2 Installation requirements

Make sure that the following requirements are met before you start installing the unit:

- The nameplate data of the MOVIFIT® basic unit match the voltage supply system
- The MOVIFIT® basic unit is undamaged (no damage caused by transportation or storage).
- The ambient temperature corresponds to the specifications in chapter "Technical Data".
- The MOVIFIT® basic unit must not be installed under the following harmful ambient conditions:
  - Potentially explosive atmospheres
  - Oils
  - Acids
  - Gases
  - Vapors
  - Radiation
  - etc.

4.2 Mounting position

You can install the MOVIFIT® basic unit in any mounting position.



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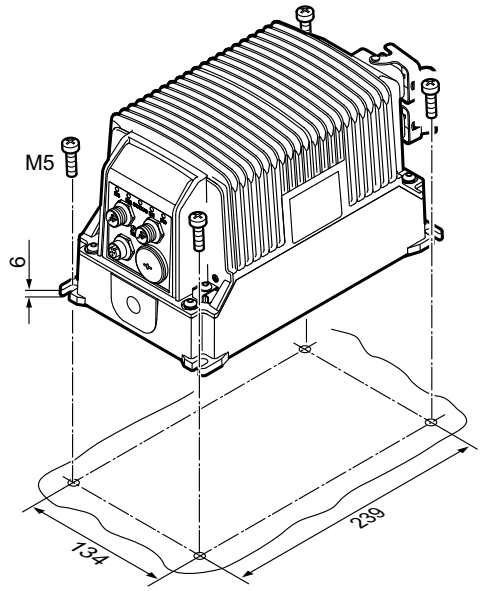
4.3 Installing MOVIFIT® basic

Mount the MOVIFIT® basic unit with 4 screws according to the following figure:
(Tightening torque 2.0 – 2.4 Nm (18 – 21 lb.in))



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5 Electrical Installation

5.1 Installation instructions

5.1.1 Earth-leakage circuit breaker

⚠ WARNING

Electric shock due to incorrect earth-leakage circuit breaker type.

Severe or fatal injuries.

- MOVIFIT® basic can cause direct current in the protective earth conductor. When an earth-leakage circuit breaker is used for protection against direct or indirect contact, only install a type B earth-leakage circuit breaker on the power supply end of the MOVIFIT® basic unit.

- Do not use a conventional earth leakage circuit-breaker as a protective device. Universal current-sensitive earth leakage circuit-breakers (tripping current 300 mA) are permitted as a protective device. During normal operation of MOVIFIT® basic units, earth-leakage currents > 3.5 mA can occur.
- SEW-EURODRIVE recommends that you do not use earth-leakage circuit breakers. However, if an earth-leakage circuit breaker is stipulated for direct or indirect protection against contact, observe the note above in accordance with EN 61800-5-1.

5.1.2 Line contactor

NOTICE

Damage due to jogging.

Damage to the MOVIFIT® basic unit.

- Do not use the line contactor for jogging, but only for switching the MOVIFIT® basic unit on and off. In jog mode, use the control signals (AS-Interface bits or binary inputs).
- Observe a minimum switch-off time of 2 s for the line contactor.

- Only use a contactor of utilization category AC3 (EN 60947-4-1) as a line contactor.

5.1.3 Notes on PE connection

⚠ WARNING

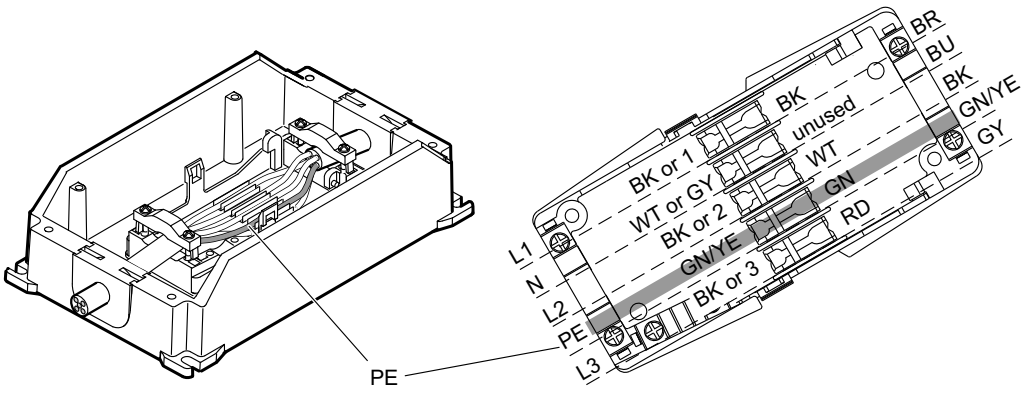
Electric shock due to incorrect connection of PE.

Severe or fatal injuries.

- Observe the following notes regarding PE connection.

PE connection in the unit

Establish a PE connection in the unit.



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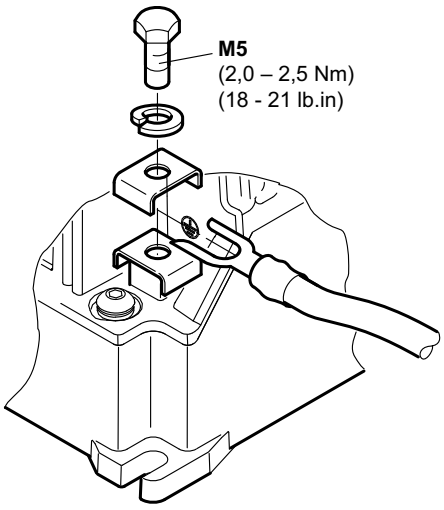
PE connection on the outside of the housing

During normal operation of the MOVIFIT® basic inverter, earth-leakage currents ≥ 3.5 mA can occur. To meet the requirements of EN 61800-5-1, you must establish 2 PE connections.

Install a second PE conductor with a cross section of at least the cross section of the supply system cable:



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5.1.4 EMC-compliant installation

INFORMATION

This drive system is not designed for operation on a public low voltage supply system that supplies residential areas.

This is a product with restricted availability in accordance with IEC 61800-3. It may cause EMC interference. In this case, it is recommended for the operator to take suitable measures.

For detailed information on EMC compliant installation, refer to the publication "Electromagnetic Compatibility in Drive Engineering" from SEW-EURODRIVE.

With respect to the EMC regulation, frequency inverters cannot be operated as stand-alone units. Regarding EMC, they can only be evaluated when they are integrated in a drive system. Conformity is declared for a described, CE-typical drive system. These operating instructions contain further information.

5.1.5 Installation altitude above 1000 m above sea level

MOVIFIT® basic drives can be also used in altitudes of 1000 – 4000 m above sea level[1)]. Observe the following basic conditions:

- The nominal continuous power is reduced due to the reduced cooling above 1000 m (see chapter "Technical Data").
- Above 2000 m asl, the air and creeping distances are only sufficient for overvoltage class 2. If the installation calls for overvoltage class 3, you will have to install additional external overvoltage protection to limit overvoltage peaks to 2.5 kV phase-to-phase and phase-to-ground.
- If safe electrical disconnection is required, it must be implemented outside the unit for altitudes of 2000 m above sea level and higher (safe electrical disconnection in accordance with EN 61800-5-1).
- In installation altitudes between 2000 m to 4000 m above sea level, the permitted nominal line voltages are reduced by 6 V per 100 m.

5.1.6 Protection devices

- MOVIFIT® basic drives are equipped with integrated protection devices against overload of the drive. External motor protection devices are not necessary.

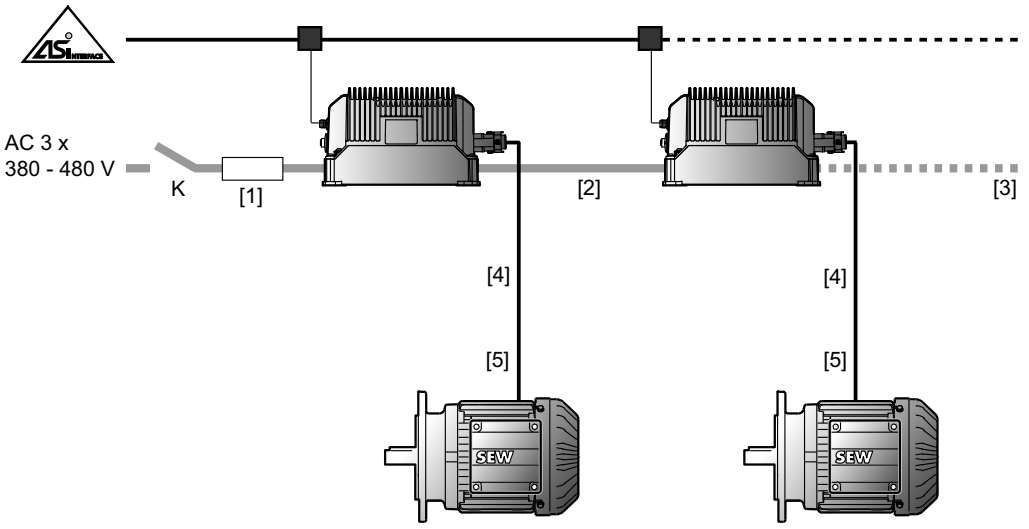
5.1.7 UL compliant installation (in preparation)

UL and cUL approval for the MOVIFIT® basic unit series is in preparation.

1) The maximum altitude is limited by creeping distances and flameproof components, such as capacitors.

5.2 Topology

The following figure shows a typical MOVIFIT® basic drive system with AS-Interface control:



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K: Line contactor

Line protection fuse	Power bus (line cable)		Motor cable	
Type	Minimum conductor Cross section	Maximum Total length	Minimum conductor Cross section	Maximum Length
[1]	[2]	[3]	[4]	[5]
B16	2.5 mm² AWG14	130 m	2.5 mm² AWG14	10 m
B20	4.0 mm² AWG12	170 m	2.5 mm² AWG14	3 m
B25	6.0 mm² AWG10	190 m	2.5 mm² AWG14	3 m

The table shows typical characteristics at an ambient temperature of 40 °C with routing type B2 according to EN 60204-1.

The applicable country-specific standards and regulations must also be observed for individual project planning and installation.

5.3 Power bus connection (line cable)

⚠ WARNING

Electric shock due to charged capacitors

Severe or fatal injuries.

- De-energize the MOVIFIT® basic drive using a suitable external cut-off device before removing the EBOX from the ABOX.
- Secure the drive against unintended re-connection to the voltage supply.
- Then wait at least for 10 minutes.

⚠ WARNING

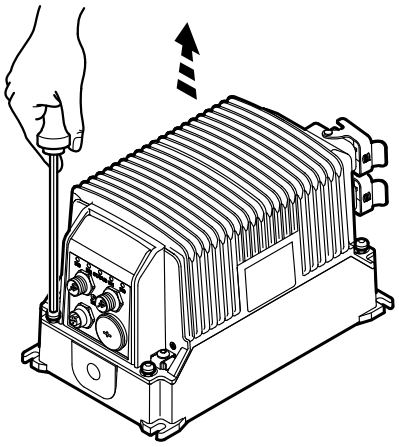
Danger of burns due to hot surfaces of the MOVIFIT® basic unit.

Severe injuries.

- Do not touch the MOVIFIT® basic until it has cooled down sufficiently.

Connect the MOVIFIT® basic unit to the power bus (line cable) as follows.

1. Loosen the 4 screws and lift up the EBOX.



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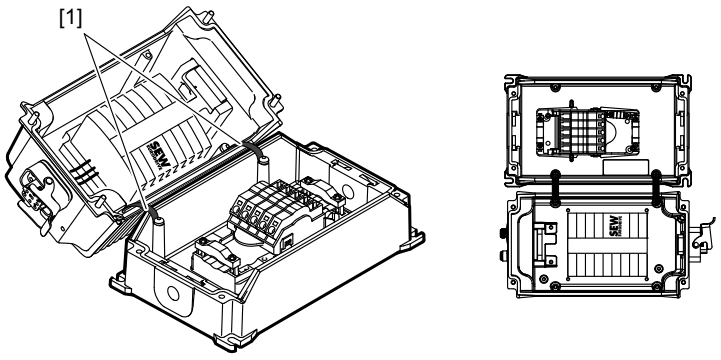
2. Loosen the EBOX straps and install them according to the mounting position, see following figure.



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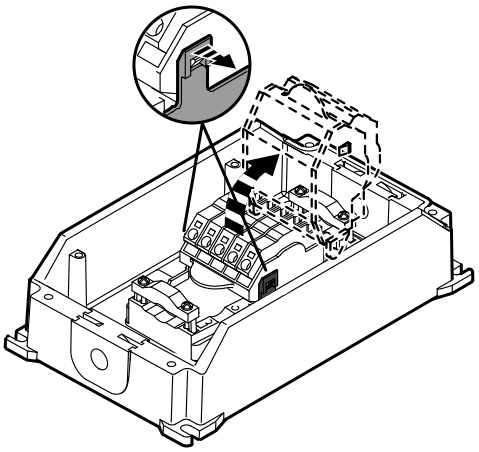
3. Pull both locking tabs to the outside and tilt up the upper part of the FieldPower® contact module.



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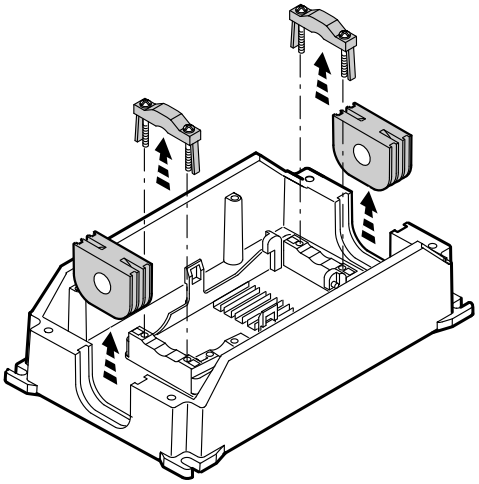
4. Loosen the 4 screws and remove the strain relief brackets.

   Remove the two cable seals.



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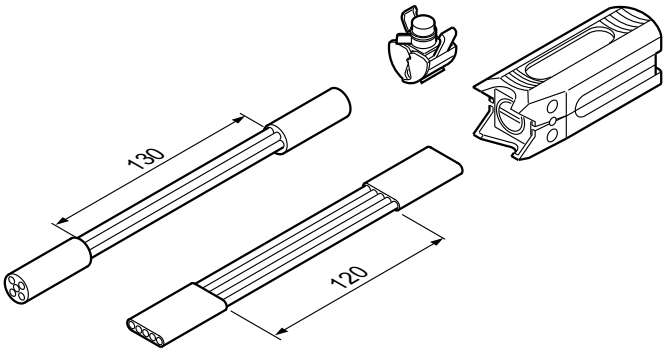
5. Remove the sheath of the line cable with a suitable stripping tool.



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Line cable	Stripping tool	Strip length
Round cable	AM 16	130 mm
Flat cable	AMF 6/10	120 mm

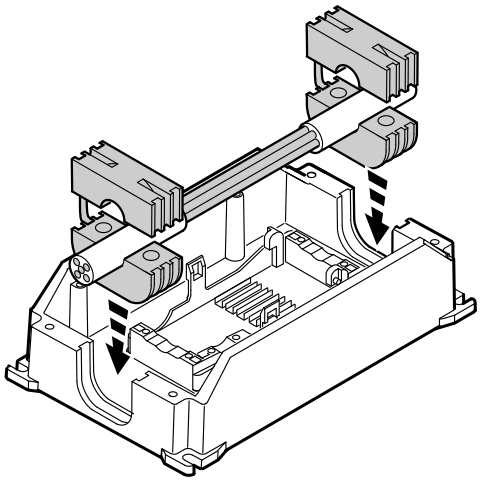
6. Fix the cable seals around the line cable.

   NOTICE Ingression of moisture or dust due to incorrect cable seal.

   Damage to the MOVIFIT® basic unit.

   - Only use cable seals approved for the line cable diameter.

   Insert the cable seals with the line cable in the recesses in the ABOX.



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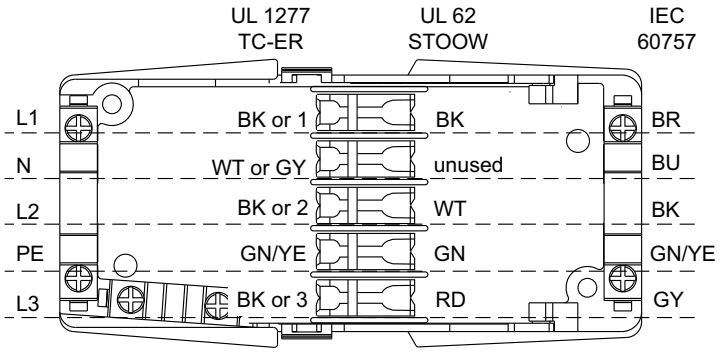
7. ⚠ **WARNING** Risk of crushing due to wrong sense of rotation or damage due to reverse connection of phases.

   Severe or fatal injuries, irreparable damage to the unit.

   - Observe the following connection diagram.
   - Prevent short circuits.

   Insert the conductors of the line cable in the cable guides according to the following wiring diagram:



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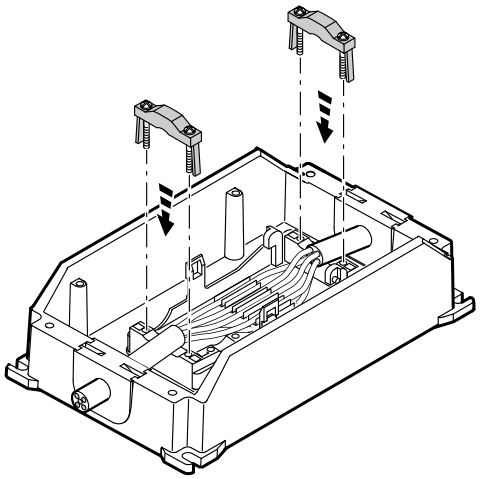
8. Screw the strain relief brackets to the ABOX and fix the line cable with the brackets (tightening torque: 0.6 Nm, 5.3 lb.in).



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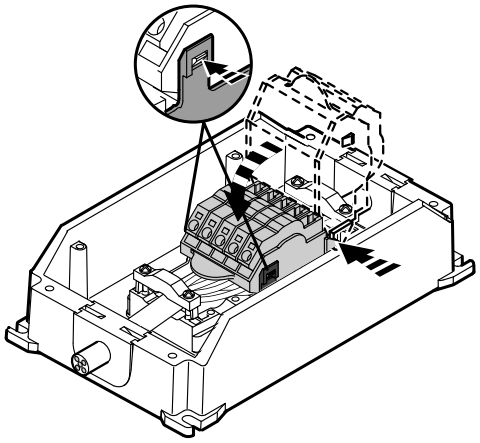
9. Place the upper part of the contact module on the hinge hooks.

   Tilt down the upper part of the contact module until it latches on both sides.



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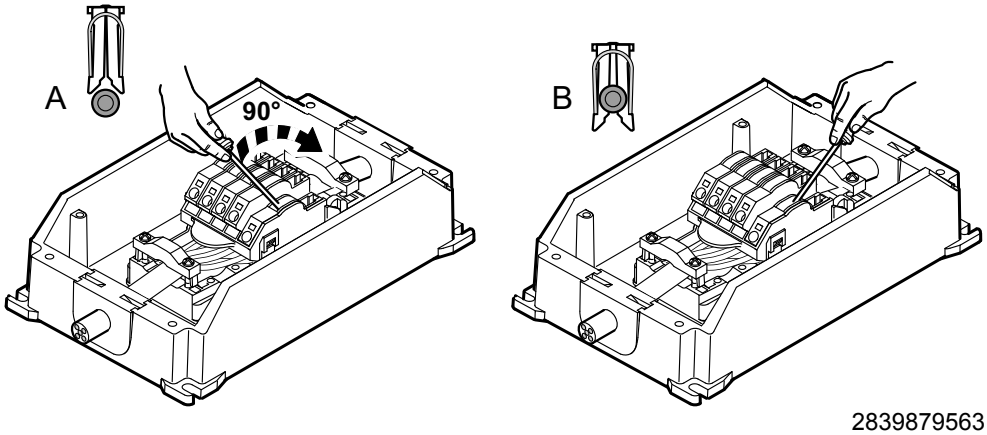
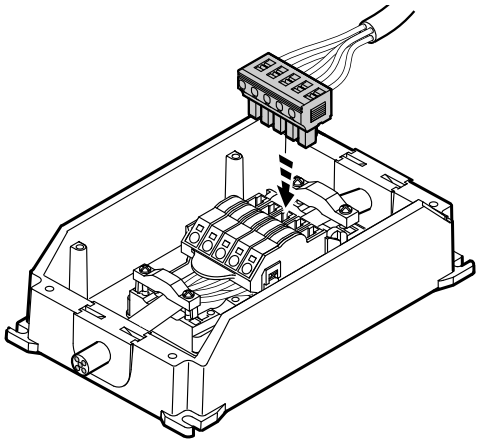
10. Use the screwdriver (blade width 3 – 3.5 mm) to lever the contacts of the insulation displacement connector downwards.



2839879563

11. Plug in the line connector of the EBOX to the FieldPower® contact module.



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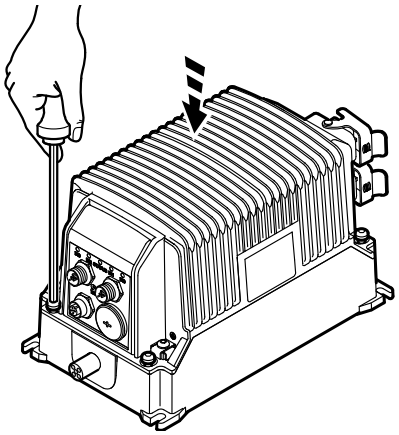
12. Position the EBOX on the ABOX.

    Screw on the EBOX with 4 screws (tightening torque: 2 Nm, 18 lb.in).



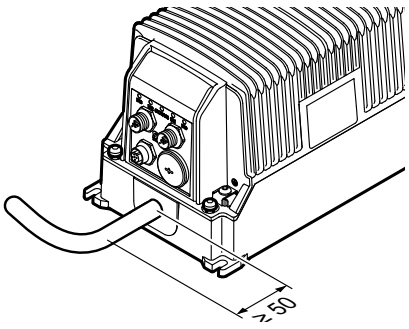
2839860363

NOTICE Ingression of moisture or dust when bending the line cable.

Damage to the MOVIFIT® basic unit.

- Do not bend the line cable for at least 50 mm.

  The MOVIFIT® basic unit only meets the IP54 requirements if the line cable is not bent within 50 mm of the unit.



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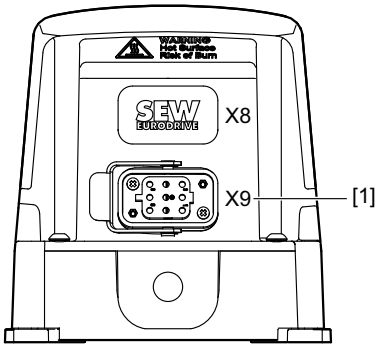
5.4 Motor connection

5.4.1 Motor connection variants

The following figure shows the motor plug connector variants for MOVIFIT® basic:

MOVIFIT® basic inverter

MOVIFIT® basic reversing starter



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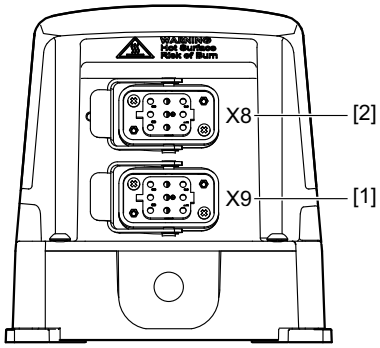
MOVIFIT® basic dual motor starter

(In preparation)



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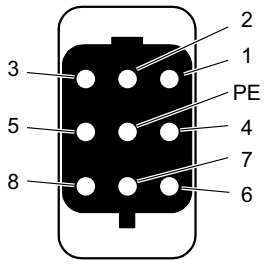
[1] X9 Motor connection
[2] X8 Motor connection

5.4.2 X9, (X8): Motor connection

The X8 plug connector is only available in conjunction with MOVIFIT® basic with dual-motor starter

Connection

The following table provides information about this connection:

Function		
Power connection for motor with brake		
Connection type		
Q 8/0, female		
Wiring diagram		
 2441429259		
Assignment		
No.	**Name**	**Function**
1	U	Motor phase U output
2	n. c.	Not connected
3	W	Motor phase W output
4	L1	Supply of mechanical brake (only with MOVIFIT® basic inverter)
5	n. c.	Not connected
6	L2_S	Supply of mechanical brake switched (only with MOVIFIT® basic inverter)
7	V	Motor phase V output
8	n. c.	Not connected
PE	PE	Protective earth

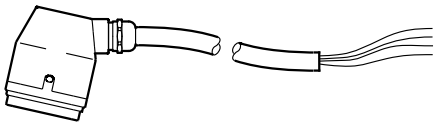
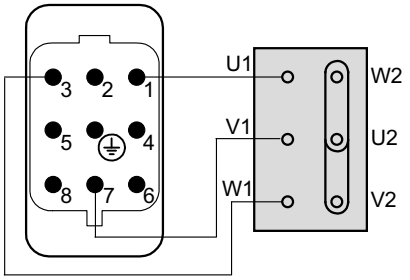
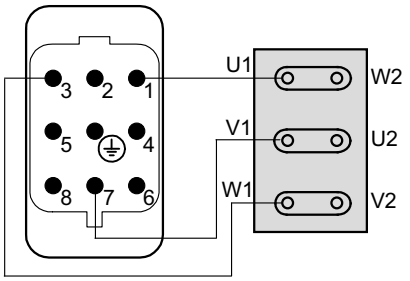
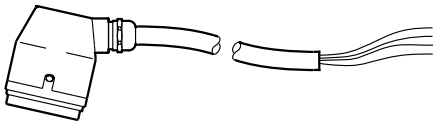
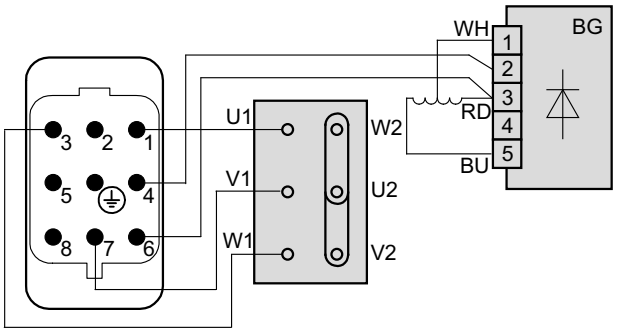
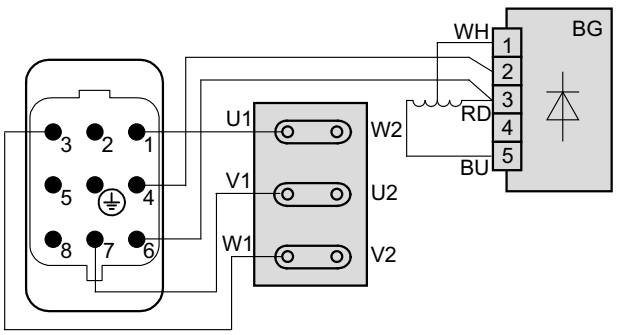
Connection cable The following table shows possible motor cables:

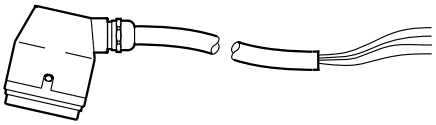
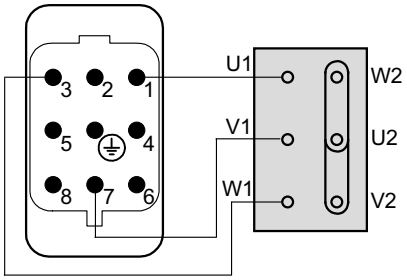
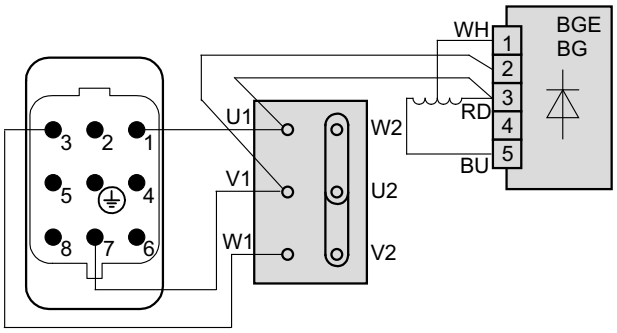
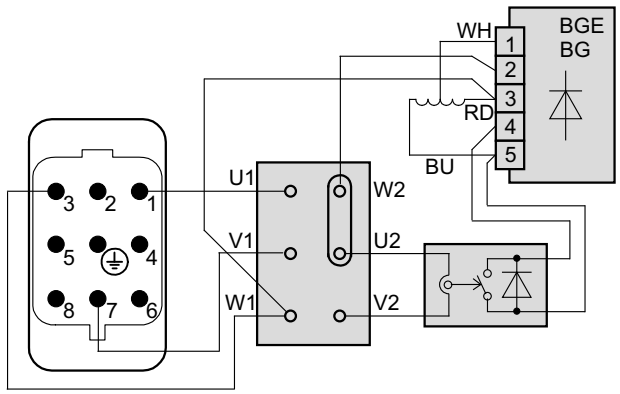
NOTICE

Danger in case of incorrect wiring of U1, V1, and W1 or short circuit. The motor outputs of MOVIFIT® basic are not protected against short circuits.

Irreparable damage to the MOVIFIT® basic unit.

- Observe the following wiring diagrams.
- Prevent any short circuits between the conductors.

Connection cable and component			
MOVIFIT® basic	**Motor cable**	**Length/ Installation type**	**Motor connection**
	Cable design: 4G2.5, shielded Cable design: 4G2.5, unshielded  Q 8/0 Open	Max. 10 m Max. 3 m	**Motor without brake, ⅄ connection**  **Motor without brake, △ connection** 
MOVIFIT® basic inverter	Cable design: 7G2.5, shielded Cable design: 7G2.5, unshielded  Q 8/0 Open	Max. 10 m Max. 3 m	**Motor with brake, ⅄ connection**  **Motor with brake, △ connection** 

<table>
<tr><th colspan="4">Connection cable and component</th></tr>
<tr><th>MOVIFIT® basic</th><th>Motor cable</th><th>Length/ Installation type</th><th>Motor connection</th></tr>
<tr><td rowspan="3">MOVIFIT® basic motor starter</td><td rowspan="3">Cable design: 4G2.5, unshielded
 
Q 8/0 Open</td><td rowspan="3">Max. 10 m</td><td>Motor without brake
  </td></tr>
<tr><td>Motor with brake
  </td></tr>
<tr><td>Motor with brake and BSR brake controller
 
For applications with regenerative mode, SEW-EURODRIVE recommends the BSR brake controller.</td></tr>
</table>

Mating connector Use a type Q8/0 plug connector for pre-fabricating these motor cables:

INFORMATION

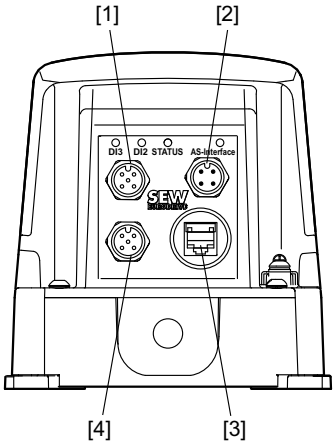
Note the following when using a mating connector with metallic housing:

- Ensure a suitable shield connection.
- Connect the housing of the mating connector with PE.

5.5 Control unit connection

The following figure shows the control unit variants for MOVIFIT® basic:

MOVIFIT® basic with AS-Interface



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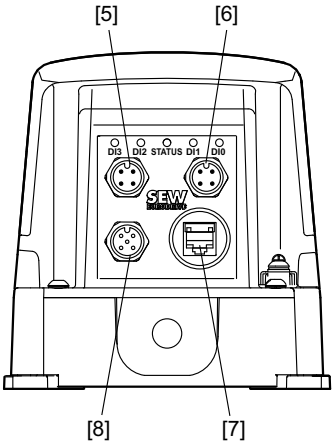
[1] X22 Binary input sensor 2
[2] X21 AS-Interface connection
[3] X50 Diagnostic interface
[4] X23 Binary input sensor 3

MOVIFIT® basic with binary control



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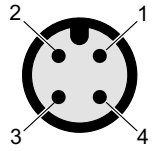
[5] X12 Signal inputs DI2 + DI3
[6] X11 Signal inputs DI0 + DI1
[7] X50 Diagnostic interface
[8] X13 Signal outputs DO0 + DO1

5.6 Connections of MOVIFIT® basic with AS-Interface

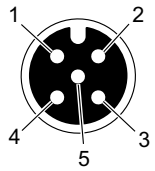
5.6.1 X21: AS-Interface connection

The following table provides information about this connection:

Function		
AS-Interface – input		
Connection type		
M12, 4-pole, male, A-coded		
Wiring diagram		
 2384154763		
Assignment		
No.	**Name**	**Function**
1	AS-Interface +	AS-Interface +
2	n. c.	Not connected
3	AS-Interface −	AS-Interface −
4	n. c.	Not connected

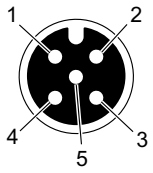
5.6.2 X22: Binary input sensor 2

The following table provides information about this connection:

Function		
Binary input sensor 2		
Connection type		
M12, 5-pole, female, A-coded		
Wiring diagram		
 2264816267		
Assignment		
No.	**Name**	**Function**
1	+24 V	DC 24 V output (sensor supply)
2	n. c.	Not connected
3	0V24	0V24 reference potential
4	DI2	Binary input sensor 2
5	PE	Equipotential bonding/protective earth conductor

5.6.3 X23: Binary input sensor 3

The following table provides information about this connection:

Function		
Binary input sensor 3		
Connection type		
M12, 5-pole, female, A-coded		
Wiring diagram		
 2264816267		
Assignment		
No.	**Name**	**Function**
1	+24 V	DC 24 V output (sensor supply)
2	n. c.	Not connected
3	0V24	0V24 reference potential
4	DI3	Binary input sensor 3
5	PE	Equipotential bonding/protective earth conductor

5.6.4 X50: Diagnostic interface

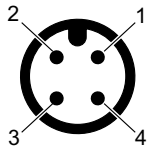
The following table provides information about this connection:

Function		
Diagnostics and programming interface		
Connection type		
RJ11 (6P6C)		
Wiring diagram		
 3163123211		
Assignment		
No.	**Name**	**Function**
1	n. c.	Not connected
2	RS+	RS-485 data cable (+)
3	RS −	RS-485 data cable (–)
4	+24 V	DC 24 V output for keypad
5	0V24	0V24 reference potential for keypad
6	n. c.	Not connected

5.7 Connections of MOVIFIT® basic with binary control

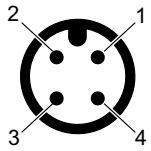
5.7.1 X11: Signal inputs 0 and 1 of MOVIFIT® basic

The following table provides information about this connection:

Function		
Binary inputs 0 and 1		
Connection type		
M12, 4-pole, male, A-coded		
Wiring diagram		
 2718233355		
Assignment		
No.	**Name**	**Function**
1	n. c.	Not connected
2	DI1	Binary input 1
3	0V24	0V24 reference potential
4	DI0	Binary input 0

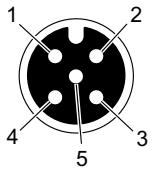
5.7.2 X12: Signal inputs 2 and 3 of MOVIFIT® basic

The following table provides information about this connection:

Function		
Binary inputs 2 and 3		
Connection type		
M12, 4-pole, male, A-coded		
Wiring diagram		
 2718233355		
Assignment		
No.	**Name**	**Function**
1	n. c.	Not connected
2	DI3	Binary input 3
3	0V24	0V24 reference potential
4	DI2	Binary input 2

5.7.3 X13: Signal outputs 0 and 1 of MOVIFIT® basic

The following table informs about this connection:

Function		
Binary outputs 0 and 1		
Connection type		
M12, 5-pole, female, A-coded		
Wiring diagram		
 2264816267		
Assignment		
No.	**Name**	**Function**
1	+24 V	DC 24 V output
2	DO1	Binary output 1 (manual mode) 0: MOVIFIT® basic control via control signals 1: Manual control of MOVIFIT® basic
3	0V24	0V24 reference potential
4	DO0	Binary output 0 (ready signal) 0: MOVIFIT® basic is not ready 1: MOVIFIT® basic is ready
5	PE	Equipotential bonding/protective earth conductor

5.7.4 X50: Diagnostic interface

The following table informs about this connection:

Function		
Diagnostics and programming interface		
Connection type		
RJ11 (6P6C)		
Wiring diagram		
3163123211		
Assignment		
No.	**Name**	**Function**
1	n. c.	Not connected
2	RS+	RS-485 data line (+)
3	RS −	RS-485 data cable (–)
4	+24 V	DC 24 V output for keypad
5	0V24	0V24 reference potential for keypad
6	n. c.	Not connected

5.8 Connection of LT-BG keypad

The MOVIFIT® basic inverter is equipped with an X50 diagnostic interface (RJ-11 socket) for startup, parameterization and service.

The diagnostic interface is located in the connection block of the control unit.

You must remove the screw plug before plugging in the connector into the diagnostic interface.

⚠ **DANGER** Danger of burns due to hot surfaces of the MOVIFIT® basic unit.

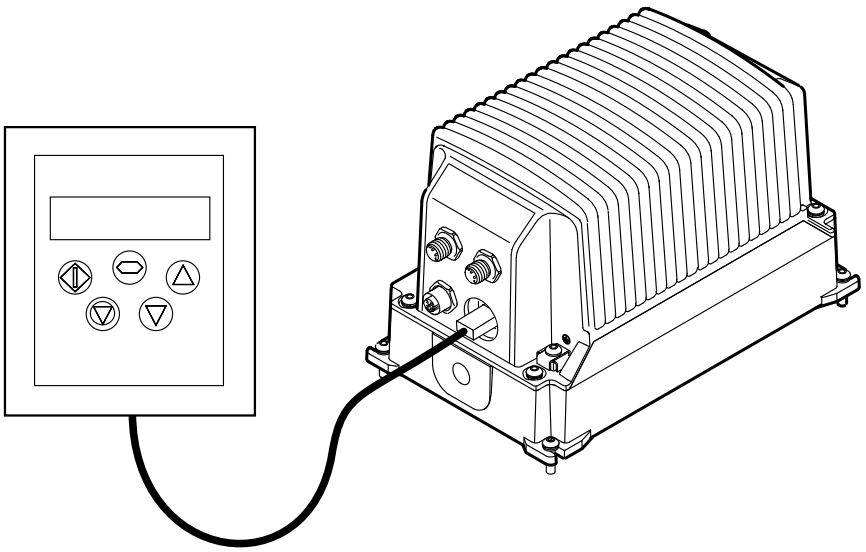
Severe injuries.

- Wait for the MOVIFIT® drive to cool down sufficiently before touching it.

Use the cable enclosed with the keypad to connect the keypad to the MOVIFIT® basic unit.

Scope of delivery:

Type	Part number	Scope of delivery
LT-BG	1 820 864 9	– LT-BG keypad – Cable with RJ11 – RJ11 plug connectors



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5.9 PC connection

The MOVIFIT® basic inverter is equipped with an X50 diagnostic interface (RJ-11 socket) for startup, parameterization and service.

The diagnostic interface is located in the connection block of the control unit.

You must remove the screw plug before plugging in the connector into the diagnostic interface.

⚠ **DANGER** Danger of burns due to hot surfaces of the MOVIFIT® basic unit.

Severe injuries.

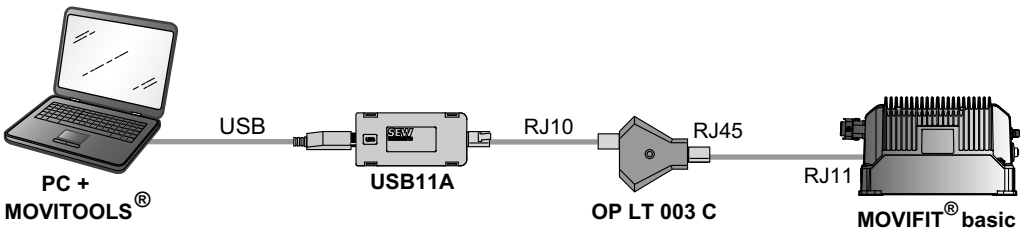
- Wait for the MOVIFIT® drive to cool down sufficiently before touching it.

The diagnostic interface can be connected to a conventional PC/laptop with the following accessories:

- USB11A interface adapter
- and OP LT 003 C adapter

Scope of delivery:

Type	Part number	Scope of delivery
USB11A	0 824 831 1	– USB11A interface adapter – USB cable – Cable with RJ10 – RJ10 plug connectors
OP LT 003 C	1 824 368 1	– OP LT 003 C adapter with DC 24 V -> DC 5 V voltage converter – Cable with RJ45 – RJ11 plug connectors



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6 Startup

6.1 Important startup notes

INFORMATION

You must comply with the general safety notes in chapter "Safety Notes" during startup.

⚠ WARNING

Risk of crushing due to missing or defective protective covers.

Severe or fatal injuries.

- Install the protective covers of the plant according to the instructions, also see the operating instructions of the gear unit.
- Never start up the drive if the protective covers are not installed.

⚠ WARNING

Electric shock due to dangerous voltages in the ABOX.

Severe or fatal injuries.

- De-energize the MOVIFIT® basic unit using a suitable external cut-off device before removing the EBOX.
- Secure the MOVIFIT® basic unit against unintended re-connection to the voltage supply.
- Wait for at least 10 minutes before removing the EBOX.

⚠ WARNING

Danger of burns due to hot surfaces of the MOVIFIT® basic unit.

Severe injuries.

- Do not touch the MOVIFIT® basic until it has cooled down sufficiently.

⚠ Warning

Unit malfunction due to incorrect unit setting.

Severe or fatal injuries.

- Observe the startup instructions.
- The installation must only be carried out by qualified personnel.
- Only use settings that are consistent with the function.

INFORMATION

To ensure fault-free operation, do not disconnect or connect power or signal cables during operation.

6.2 Requirements

The following conditions apply to startup:

- The MOVIFIT® basic unit must be installed correctly both mechanically and electrically.
- Appropriate safety measures prevent the drives from starting up unintentionally.
- Appropriate safety measures must be taken to prevent risk of injury or damage to machine.

The following hardware must be available for startup and parameterization of the MOVIFIT® basic inverter:

- PC or laptop, see chapter "PC connection"

The following software must be available on the PC or laptop for startup and parameterization of the MOVIFIT® basic inverter:

- "`LT Shell`", Version 3.10 or later

INFORMATION

For startup of the MOVIFIT® basic motor starter, you do not require a PC/laptop and software.

6.3 Startup procedure for the MOVIFIT® basic inverter

Proceed as follows to startup the MOVIFIT® basic inverter:

1. Check the connection of the MOVIFIT® basic unit.

   See chapter "Electrical Installation".

2. Make sure that the motor cannot start

   e.g. by unplugging the motor connector(s) from the MOVIFIT® basic unit.

3. Switch on the line voltage.

   The "Status" LED is now illuminated.

4. Connect the LT-BG keypad or the PC to the MOVIFIT® basic unit.

   See chapter "LT-BG keypad connection" (page 33).

   or chapter "PC connection" (page 34).

   ⚠ **WARNING** During the auto-tune phase in vector control, the motor axis briefly rotates.

   If you set the parameter *P4-02 Auto-tune* = "1", the inverter performs a calibration process (Auto-tune). The inverter releases the brake and the motor **briefly** rotates.

   Severe injuries.

   - During the auto-tune phase, observe a sufficient safety distance to all parts driven by the motor.

5. Set the following parameters:

   Motor parameters:

   For V/f control
   - *P1-07* = Nominal motor voltage
   - *P1-08* = Nominal motor current
   - *P1-09* = Nominal motor frequency

   For vector control
   - *P1-07* = Nominal motor voltage
   - *P1-08* = Nominal motor current
   - *P1-09* = Nominal motor frequency
   - *P4-01* = Control mode
   - *P4-02* = Auto-tune
   - *P4-05* = motor power factor

   System parameters:
   - *P1-03* = Acceleration ramp
   - *P1-04* = Deceleration ramp
   - *P1-11* = Speed n1
   - *P2-02* = Speed n2
   - *P2-03* = Speed n3
   - *P2-04* = Speed n4

   See chapter "Parameterization with LT-BG keypad" (page 43).

   or chapter "Parameterization with PC" (page 44).

6. Make sure the screw plug of the diagnostics interface has a seal and screw it in.

   NOTICE Loss of the ensured degree of protection if the screw plug of the diagnostic interface is not installed or not installed correctly.

   Damage to the MOVIFIT® basic unit

   - Make sure the screw plug of the diagnostic interface has a seal and screw it in.

7. Switch off the line voltage.
8. Set the AS-Interface slave address of the MOVIFIT® basic unit (only for MOVIFIT® basic with AS-Interface).

   See chapter "Assigning the AS-Interface address" (page 40).
9. Start up the higher-level controller.
10. Plug in the motor connector(s) at MOVIFIT® basic.
11. Switch on the line voltage.

You can now control the MOVIFIT® basic drive with the higher-level controller (via binary signals or AS-Interface).

6.4 MOVIFIT® basic motor starter – startup procedure

⚠ WARNING

Electric shock due to dangerous voltages in the ABOX.

Severe or fatal injuries.

- De-energize the MOVIFIT® basic unit using a suitable external cut-off device before removing the EBOX.
- Secure the MOVIFIT® basic unit against unintended re-connection to the voltage supply.

Proceed as follows to startup the MOVIFIT® basic motor starter:

1. Check the connection of the MOVIFIT® basic unit.

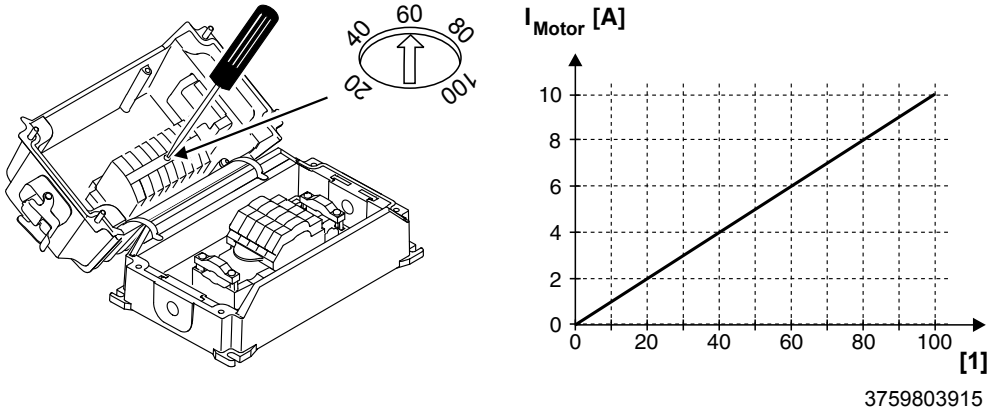
   See chapter "Electrical Installation".

2. Set the nominal motor current via the potentiometer I_{Motor} according to the motor nameplate, factory setting: about 100%.

   NOTICE Damage due to incorrect setting via potentiometer I_{Motor}. The potentiometer is to protect the motor against overload.

   Damage to the motor.

   - Set the nominal motor current via the potentiometer I_{Motor} **according to the motor nameplate**.



[1] Potentiometer setting

3. Make sure that the motor cannot start

   e.g. by unplugging the motor connector(s) from the MOVIFIT® basic unit.

4. Set the AS-Interface slave address of the MOVIFIT® basic unit (only for MOVIFIT® basic with AS-Interface).

   See chapter "Assigning the AS-Interface address" (page 40).

5. Start up the higher-level controller.
6. Plug in the motor connector(s) at MOVIFIT® basic.
7. Switch on the line voltage.

You can now control the MOVIFIT® basic drive with the higher-level controller (via binary signals or AS-Interface).

6.5 Assigning the AS-Interface slave address

SEW-EURODRIVE supplies MOVIFIT® basic with AS-Interface with address 0.

You have the following options for assigning the AS-Interface address of MOVIFIT® basic (address 1 - 31):

- **Addresses are assigned automatically** within a configured AS-Interface system when replacing a MOVIFIT® basic drive.

  The following prerequisites must be fulfilled:

  – The new MOVIFIT® basic drive must have address 0.

  – If you need to replace multiple MOVIFIT® basic drives, you must exchange them individually (one after another).

- **Manual address assignment via the plant master**

  Connect the drives to the AS-Interface cable one after another. Doing so prevents several MOVIFIT® basic drives being assigned the same AS-Interface address.

- **Manual address assignment using a hand-held AS-Interface programming device.**

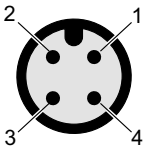
  Observe the notes in the following section when connecting the MOVIFIT® basic drive to the AS-Interface cable.

6.5.1 Assigning the slave address using a hand-held programming device

Hand-held AS-Interface programming devices offer the following functions:

- Reading out and changing an AS-Interface slave address
- Reading out the AS-Interface profile
- Reading out and changing the data and parameter bits
- Function check and test run.

When using a hand-held programming device, you need a connection cable that fits onto the AS-Interface plug connector X21 of MOVIFIT® basic (see the following figure).



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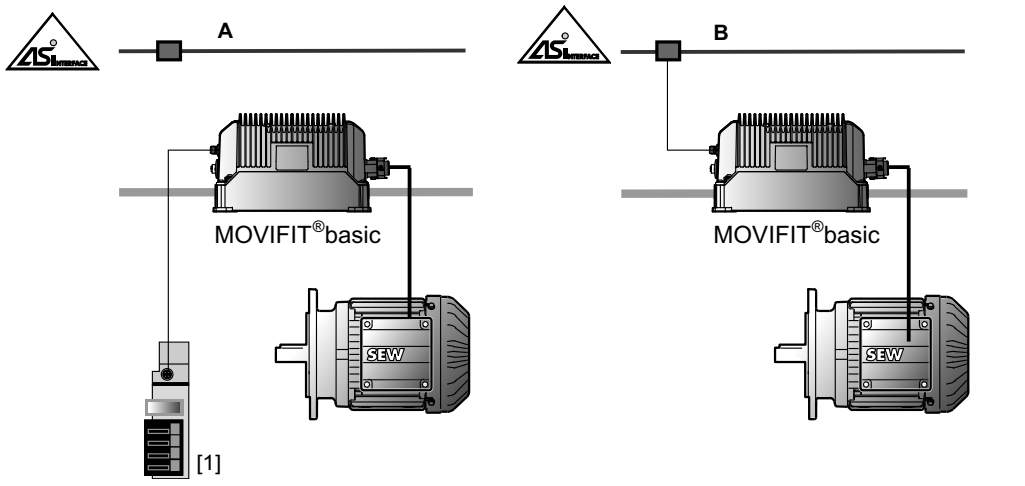
1: AS-Interface +
2. n. c.
3: AS-Interface −
4: n. c.

Example:

1. Disconnect the AS-Interface nodes from the AS-Interface network **one at a time** and assign addresses via the hand-held programming device (A).

2. Then reconnect the respective AS-Interface node to the AS-Interface network (B).



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[1] AS-Interface hand-held programming device

6.6 Parameterization with LT-BG keypad

6.6.1 Description of LT-BG keypad

Function

You can use the LT-BG keypad for startup, parameterization and manual operation of MOVIFIT® basic inverters. In addition to that, the keypad displays important information about the state of the drive.

Features

- Illuminated display
- Keypad with 5 keys
- Connection cable

Key assignment

The following figure shows the key assignment of the LT-BG keypad:

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Key		Navigate	• Switch menu • Saving parameter values • Show real-time information
Key		Up	• Increase speed • Increase parameter values
Key		Down	• Decrease speed • Decrease parameter values
Key		Stop	• Stop drive • Resetting the drive
Key		Start	• Enabling the drive • Changing the direction of rotation

Parameterization

Proceed as follows to change the parameter values:

1. Check the connection of the MOVIFIT® basic unit.
   See chapter "Electrical Installation".
2. Connect the LT-BG keypad to the MOVIFIT® basic unit.
   See chapter "LT-BG keypad connection" (page 33).
3. Make sure that the motor cannot start
   e.g. by unplugging the motor connector(s) from the MOVIFIT® basic unit.
4. Switch on the line voltage.
   After initialization, the keypad shows the rotational frequency "H", the output current "A", or the motor power "P".
   To change the display, briefly press the ⬭ key.

   `H 50.0`
5. Use the ⬭ key to activate parameter mode.
   (press ⬭ key for more than 1 s)

   `P 1 - 0 1`
6. Use the ▲ key and the ▼ key to select the desired parameter.

   `P 1 - 0 3`
7. Use the ⬭ key to activate the setting mode.

   `5.0`
8. Use the ▲ key and the ▼ key to set the required parameter value.

   `2.0`
9. Use the ⬭ key to quit setting mode.

   `P 1 - 0 3`
10. Use the ⬭ key to quit parameter mode.
    (press ⬭ key for more than 1 s)
    The keypad shows "StoP", "H ", "A ", or "P ".

    `S t o P`
11. Switch off the line voltage.
12. Plug in the motor connector(s) at the MOVIFIT® basic unit.
13. **NOTICE** Damage due to missing or incorrectly mounted screw plug of the diagnostic interface X50. The degree of protection of MOVIFIT® basic specified in chapter "Technical Data" only applies if the screw plug of the diagnostic interface is mounted correctly.

    Damage to the MOVIFIT® basic unit.
    - Once you have finished working with the keypad, unplug the connector from the diagnostic interface.
    - Screw the screw plug of the diagnostic interface back in with the seal.

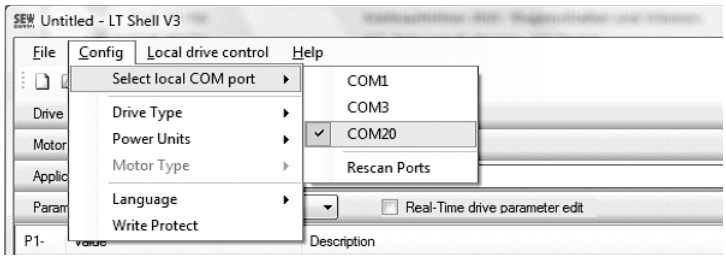
For a description of the parameters, refer to chapter "Parameter list – MOVIFIT® basic inverter"

6.7 Parameterization with the PC

(Only for MOVIFIT® basic inverter)

Proceed as follows to change the parameter values via the PC:

1. Check the connection of the MOVIFIT® basic unit.
   See chapter "Electrical Installation".
2. Connect the PC/laptop to the MOVIFIT® basic unit.
   See chapter "PC connection".
3. Start the `LT Shell .. .exe` software.
4. Select the COM port of the PC/laptop, the MOVIFIT® basic unit is connected to.



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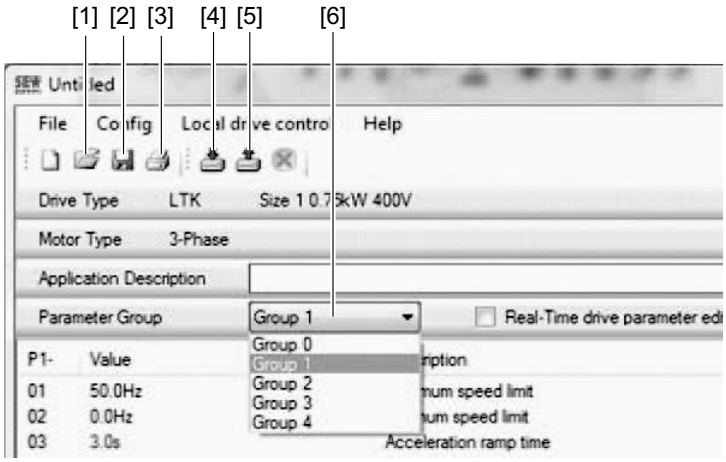
5. Read the parameter set with the key of the MOVIFIT® basic.
   The parameter menu is displayed:



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[1] Open parameter set
[2] Save parameter set on PC
[3] Print parameter set
[4] Read parameter set from MOVIFIT® basic unit.
[5] Transmit parameter set to MOVIFIT® basic unit.
[6] Select parameter group

6. Select the required parameter group [6].
7. Double-click the required parameter.
8. Enter the new parameter value into the input field.
9. Transmit the parameter set from the PC to the MOVIFIT® basic via the key.

6.8 Parameter directory of the MOVIFIT® basic inverter

The following tables show the unit-relevant parameters. The keypad shows additional parameters that are without function for MOVIFIT® basic.

6.8.1 Standard parameters

The following table shows the standard parameters:

No.	Name	Section	Standard	Description
P1-01	Upper speed limit [Hz] or [rpm]	*P1-02* – *P1-09* x 5 (up to 2000 Hz max.)	50,0 Hz	Setting the upper speed limit. The display in [Hz] or [rpm] depends on parameter *P1-10*.
P1-02	Lower speed limit [Hz] or [rpm]	0 – *P1-01*	0.0 Hz	Setting the lower speed limit. The display in [Hz] or [rpm] depends on parameter *P1-10*.
P1-03	Acceleration ramp	0.0 s – 3000 s	5.0 s	Time for acceleration along the ramp from 0 to the nominal frequency (*P1-09*).
P1-04	Deceleration ramp	0.0 s – 3000 s	5.0 s	Time for deceleration from the nominal frequency (*P1-09*) to 0. At *P1-04* = "0", the maximum deceleration is realized.
P1-06	Energy optimization (for V/f mode only)	0: Deactivated	0	With *P1-06* = "1", the unit reduces the supplied motor voltage in case of light loads.
		1: Activate		
P1-07	Rated motor voltage	0.20 – 500 V	400 V	Set the nominal motor voltage according to the motor nameplate. With *P1-07* = "0", voltage compensation is deactivated.
P1-08	Nominal motor current	0.4 – 2.2 A (with MBF07A..)	2,2 A	Set the nominal motor current according to the motor nameplate [A].
		0.8 – 4.1 A (with MBF15A..)	4,1 A	
P1-09	Rated motor frequency	25 – 500 Hz	50 Hz	Set the nominal motor frequency according to the motor nameplate [Hz].
P1-10	Rated motor speed	0 – 30000 min^{-1}	0	Set the nominal motor speed With *P1-10* ≠ 0, all speed-related parameters are displayed in rpm.
P1-11	Speed n1	*-P1-01* – *+P1-01*	50 Hz	The drive runs with this speed in jog mode, or when the speed n1 was selected by the higher-level controller.
P1-12	Control mode of the drive	0: Binary signals or AS-Interface	0	Setting the control mode
		1: Manual mode (only clockwise)		
		2: Manual mode (CW and CCW operation)		
P1-13	Error log	The 4 most recent errors are logged.	Display of the most recent error	The most recent error is displayed first. Exception: Undervoltage errors are only logged once.

6.8.2 Advanced parameters

The following table shows the advanced parameters:

No.	Name	Section	Standard	Description
P2-02	Speed n2	*-P1-01 – +P1-01*	10 Hz	The drive runs with the speed that was selected by the higher-level controller.
P2-03	Speed n3	*-P1-01 – +P1-01*	25 Hz	
P2-04	Speed n4	*-P1-01 – +P1-01*	50 Hz	
P2-16	Zero speed holding time	0 – 60 s	0.2 s	Time during which the speed "0" is held at the output before the drive is inhibited.
P2-19	Keypad restart mode	0: Minimum speed 1: Most recently used speed	0	Speed selection when drive is restarted.
P2-21	Scaling factor	0.000 – 30.000	0.000	Scaling factor of the display variable P2-22: With *P2-21* = "0", the display function is deactivated.
P2-22	Display variable	1: Motor speed 2: Motor torque 3: Motor current	1	Selection of variables displayed by the unit. This variable is scaled with parameter *P2-21*.
P2-24	Effective switching frequency	4 kHz 8 kHz 16 kHz	16 kHz	Effective switching frequency of the power section. A higher switching frequency means less motor noise, but also higher energy losses in the power section.
P2-38	Parameter lock	0: Enabled 1: Disabled	0	Blocking/enabling parameter changes. When the lock is active, you cannot change any parameters.
P2-39	Operating hours counter	0 – 99999 hours	Display	Total number of operating hours of the drive.
P2-40	Inverter power	–	Display	Display of the power of MOVIFIT® basic.

6.8.3 Motor control parameters

The following table lists the parameters for motor control:

No.	Name	Section	Standard	Description
P4-01	Control modes	0: Speed control (Vector)	2	Control mode selection To ensure optimum motor power, you must perform an auto-tune process (*P4-02*) each time you change the control mode.
		1: Setting can not be used for MOVIFIT® basic.		
		2: Speed control (V/f)		
P4-02	Auto-tune motor parameters	0: Deactivated	0	If you set parameter *P4-02* = "1", the inverter performs a static measurement of the motor parameters. You must set the parameters *P1-07*, *P1-08*, and *P1-09* according to the data on the motor nameplate before you can start the auto-tune process. Auto-tune is performed: • When receiving the first enable signal after operation with factory-set parameters • Or when *P1-08* has been changed No hardware enable is required for this.
		1: Enable		
P4-05	Motor power factor	0.50 – 0.99	Inverter power	Setting the power factor cos Φ of the motor according to the motor nameplate. This setting is mandatory for all vector control modes.

6.8.4 Monitoring parameters

The following table shows the monitoring parameters:

The parameter group 0 is used to display internal drive parameters for monitoring purposes. You cannot change these parameters.

No.	Name	Display range	Description
P0-03	Setpoint speed	-500% – +500%	Speed display (100% = nominal motor frequency)
P0-04	Setpoint speed	*-P1-01 – +P1-01* [Hz] or [rpm]	Speed display in Hz or rpm
P0-13	Output torque	0 - 200%	Output torque (100% = nominal motor torque)
P0-20	DC link voltage	[V DC]	Internal DC link voltage
P0-21	Inverter temperature	[°C]	Temperature inside the unit
P0-25	Calculated rotor speed	[Hz] or [rpm]	Calculated motor speed (only valid in a vector control mode)
P0-26	kWh counter	0.0 - 999.9 kWh	Energy consumption in [kWh]
P0-27	MWh counter	0.0 - 60000 MWh	Energy consumption in [MWh]
P0-28	Software ID, IO processor	e.g. "1.00", "493F"	Version number and check sum of the I/O processor in the unit
P0-29	Software ID, motor control	e.g. "1.00", "7A5C"	Version number and check sum of the motor controller in the unit
P0-30	Serial number of the inverter	000000 - 999999 00-000 - 99-999	Serial number of the unit e.g. 540102 / 24 / 003

INFORMATION

In addition to the parameters described above, the keypad or the parameter menu show other parameters. However, these are irrelevant for the drive, thus they are not described here.

6.9 Functions of MOVIFIT® basic with AS-Interface

6.9.1 Data transfer AS-Interface master → MOVIFIT® basic

MOVIFIT® basic inverter

The following table shows the 4 data bits that the AS-Interface master sends to the MOVIFIT® basic inverter and the functions of the drive:

AS-Interface bit				Function
DO3	DO2	DO1	DO0	MOVIFIT® basic inverter
X	X	0	0	Stop
X	X	0	1	Enable CW
X	X	1	0	Enable CCW
X	X	1	1	Stop/reset
0	0	X	X	Setpoint speed = n1
0	1	X	X	Setpoint speed = n2
1	0	X	X	Setpoint speed = n3
1	1	X	X	Setpoint speed = n4

MOVIFIT® basic motor starter

The following table shows the 4 data bits that the AS-Interface master sends to the MOVIFIT® basic motor starter and the functions of the drive:

AS-Interface bit			Function	
DO2	DO1	DO0	MOVIFIT® basic Reversing starter	MOVIFIT® basic dual motor starter
0	0	0	Stop	Stop
0	0	1	Enable CW	Enable signal for motor at terminal X9
0	1	0	Enable CCW	Enable signal for motor at terminal X8
0	1	1	Stop	Enable signal for both motors at X9 + X8
1	X	X	Reset	Reset

6.9.2 Data transfer MOVIFIT® basic → AS-Interface master

The following table shows the 4 data bits that MOVIFIT® basic sends back to the AS-Interface master:

AS-Interface bit				Meaning
DI3	DI2	DI1	DI0	
X	X	X	1 / 0	Ready signal 0: The MOVIFIT® basic drive is not ready 1: The MOVIFIT® basic drive is ready for operation
X	X	1 / 0	X	Manual mode 0: MOVIFIT® basic control via AS-Interface 1: Manual control of MOVIFIT® basic
X	1 / 0	X	X	Sensor input 2 0: The signal of sensor 2 = "0" 1: The signal of sensor 2 = "1"
1 / 0	X	X	X	Sensor input 3 0: Signal of sensor 3 = "0" 1: Signal of sensor 3 = "1"

X = any status

6.10 Functions of MOVIFIT® basic with binary control

6.10.1 Data transfer PLC → MOVIFIT® basic

MOVIFIT® basic inverter

The following table shows the control signal that the higher-level controller (e.g. PLC) sends to the MOVIFIT® basic inverter and the functions of the drive:

Control signals				Function
DI3	DI2	DI1	DI0	MOVIFIT® basic inverter
X	X	0	0	Stop
X	X	0	1	Enable CW
X	X	1	0	Enable CCW
X	X	1	1	Stop/reset
0	0	X	X	Setpoint speed = n1
0	1	X	X	Setpoint speed = n2
1	0	X	X	Setpoint speed = n3
1	1	X	X	Setpoint speed = n4

MOVIFIT® basic motor starter

The following table shows the control signal that the higher-level controller (e.g. PLC) sends to the MOVIFIT® basic motor starter and the functions of the drive:

Control signals			Function	
DI2	DI1	DI0	MOVIFIT® basic Reversing starter	MOVIFIT® basic Dual motor starter
0	0	0	Stop	Stop
0	0	1	Enable CW	Enable signal for motor at terminal X9
0	1	0	Enable CCW	Enable signal for motor at terminal X8
0	1	1	Stop	Enable signal for both motors at X9 + X8
1	X	X	Reset	Reset

6.10.2 Data transfer MOVIFIT® basic → PLC

The following table shows the binary signals that MOVIFIT® basic sends back to the higher-level controller (e.g. PLC):

Binary signals		Meaning
DO1	DO0	
X	1 / 0	Ready signal 0: The MOVIFIT® basic drive is not ready 1: The MOVIFIT® basic drive is ready for operation
1 / 0	X	Manual mode 0: MOVIFIT® basic control via control signals 1: Manual control of MOVIFIT® basic

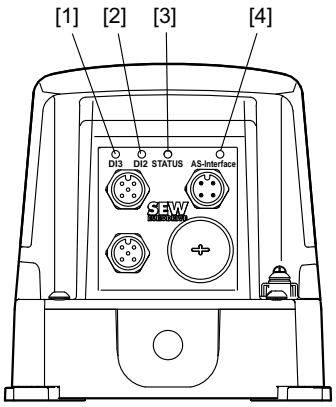
X = any status

7 Operation

7.1 Operating displays (LEDs)

The following figure shows the LEDs of MOVIFIT® basic:

MOVIFIT® basic with AS-Interface



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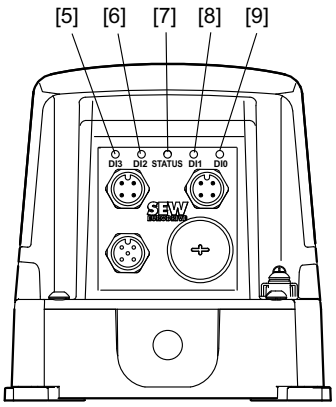
[1] LED "DI3"
[2] LED "DI2"
[3] LED "Status"
[4] LED "AS-Interface"

MOVIFIT® basic with binary control



2816399115

[5] LED "DI3"
[6] LED "DI2"
[7] LED "Status"
[8] LED "DI1"
[9] LED "DI0"

7.1.1 LEDs "DI0 – DI3"

LED color	LED status	Meaning
–	Off	Input signal at binary input DI. open or "0"
Yellow	Illuminated	Input signal present at binary input DI.

7.1.2 LED "Status"

LED color	LED status	Meaning
–	Off	No voltage supply
Green	Illuminated	MOVIFIT® basic drive is enabled
Yellow	Illuminated	MOVIFIT® basic drive is ready for operation
Red	Illuminated	An error has occurred

7.1.3 LED "AS-Interface"

LED color	LED status	Meaning
–	Off	No 24 V supply connected to the AS-Interface
Green	Illuminated	Normal mode 24 V supply connected to the AS-Interface OK Communication present
Red	Illuminated	Communication interrupted or slave address is set to 0
Green/red	Flashing	Communication or peripheral error

7.2 Operating displays of LT-BG keypad

The LT-BG keypad has the following operating displays:

SCAN..	The keypad is scanning the connection to MOVIFIT® basic.
Err-SC	Communication error between keypad and MOVIFIT® basic.
LOAD..	The keypad is loading the configuration data from MOVIFIT® basic.
P-deF	The default parameters (factory setting) are loaded.
StoP	The power section of MOVIFIT® basic is switched off. This message is displayed when the drive is at a standstill and no error is pending. MOVIFIT® basic is ready for normal operation.
P 1 - 0 3	Display of the selected parameter (parameter mode)
5.0	Display of the selected parameter value (setting mode)
H 50.0	Display of the current motor frequency in [Hz]
C 50.0	Display of the display variables *P2-22*
A 1.2	Display of the actual output current of MOVIFIT® basic in [A].
P 0.75	Display of the actual motor power in [kW].
. . . . . . Flashing dots	The actual output current of MOVIFIT® basic exceeds the nominal motor current (parameter *P1-08*).
Auto-t	Auto-tune is being performed. During this process, the motor parameters are measured and configured. Enable is not required for starting the auto-tune process.

7.3 Manual mode with LT-BG keypad

(only for MOVIFIT® basic inverter)

7.3.1 Manual mode activation (parameter *P1-12*)

Proceed as follows to activate manual mode:

1. Set parameter *P1-12*
   - to "1" => CW operation only
   - or to "2" => CW and CCW operation
2. Enable the drive via the higher-level controller.
   - For MOVIFIT® basic with binary control: DI0 and DI1 = "0"!
   - For MOVIFIT® basic with AS-Interface: DO0 and DO1 = "0"!

7.3.2 Manual mode with MOVIFIT® basic inverter

The following functions of the MOVIFIT® basic inverter can be executed in manual mode:

Enabling the drive	Use the key to enable the drive. With a setpoint speed ≠ "0", the drive will start.
Changing the setpoint speed	Use the key and the key to set the required setpoint speed. The drive follows the setpoint speed.
Changing direction of rotation	Use the key to change the direction of rotation. Requirement: *P1-12* = "2" (enable CW and CW operation)
Stop drive	Use the key to stop the drive. The drive brakes with the deceleration ramp (*P1-04*) to a standstill.
Starting the drive (with setpoint speed)	At standstill, press the key and use the key and the key to select the required setpoint speed. Press the key to confirm your selection. Then use the key to start the drive. The drive accelerates with the acceleration ramp (*P1-03*) until it reaches the target speed.
Error reset	If an error occurs during manual mode, the display shows the corresponding error message. Eliminate the cause of the error. Use the key to reset the error. After the fault reset, manual mode remains active.

7.3.3 Deactivating manual mode

⚠ WARNING

⚠ **WARNING** Risk of crushing due to unintended start of the drive. The signals of the higher-level controller become effective immediately after deactivating manual mode. The drive runs with the speed that is specified by the higher-level controller.

Severe or fatal injuries.

- During deactivation, observe a sufficient safety distance to all parts driven by the motor.
- or, before deactivating manual mode, make sure that the drive is not enabled by the higher-level controller.

Deactivate manual mode by setting parameter *P1-12* to "0".

INFORMATION

The inverter briefly releases the brake when you set parameter *P1-12* to "0".

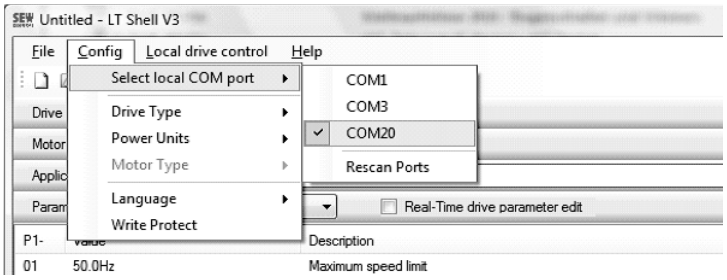
7.4 Manual mode with the PC

(only for MOVIFIT® basic inverter)

7.4.1 Manual mode activation (parameter *P1-12*)

Proceed as follows to activate manual mode:

1. Check the connection of the MOVIFIT® basic unit.
   See chapter "Electrical Installation".
2. Connect the PC/laptop to the MOVIFIT® basic unit.
   See chapter "PC connection".
3. Start the `LT Shell` software.
4. Select the COM port of the PC/laptop, the MOVIFIT® basic unit is connected to.



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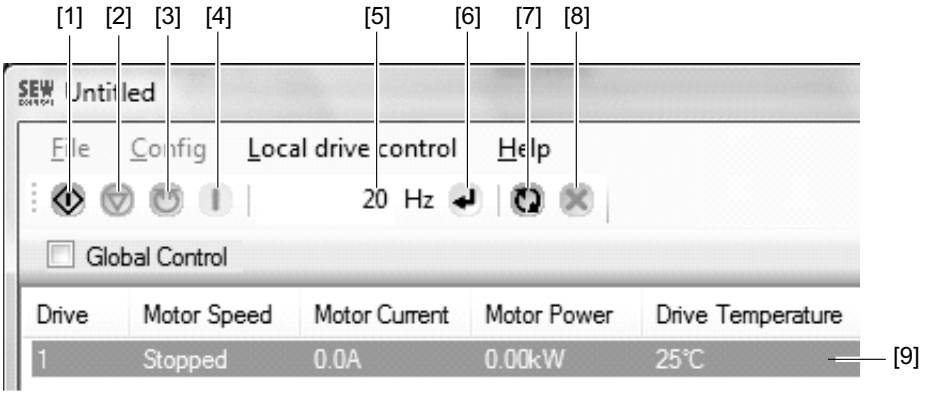
5. Read the parameter set with the button of the MOVIFIT® basic.
6. Set parameter *P1-12*
   - to "1" => CW operation only
   - or to "2" => CW and CCW operation

     CW and CCW operation is not possible with the MOVIFIT® basic dual motor starter.
7. Transmit the parameter set from the PC to the MOVIFIT® basic via the button.
8. Activate the drive via "Local Drive Control" / "Enable Drive".
   Now the menu lists the available drives.
9. Click on the MOVIFIT® basic drive.

7.4.2 Manual mode with MOVIFIT® basic inverter

The following figure shows the manual mode menu of the MOVIFIT® basic inverter:



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[1] Enable drive button
[2] Stop drive button
[3] Reverse direction button
[4] Reset error button
[5] Input field for setpoint speed
[6] Confirm setpoint speed setting button (Enter)
[7] Scan network button
[8] Abort scan button
[9] Status line of the drive (display of the current parameter)

The following functions are available in manual mode:

Enabling the drive	Use the button to enable the drive. With a setpoint speed ≠ "0", the drive will start.
Changing the setpoint speed	Use the input field [6] to enter the required setpoint speed. Use the button to confirm the setting. The drive follows the setpoint speed.
Changing the direction of rotation	Use the button to change the direction of rotation. Requirement: *P1-12* = "2" (enable CW and CW operation)
Stopping the drive	Use the button to stop the drive. The drive brakes with the deceleration ramp (*P1-04*) to a standstill.
Error reset	If an error occurs in manual mode, the "Motor Speed" column of the status line [9] shows the "Tripped" message. You can read out the error designation from parameter *P1-13*. Eliminate the cause of the error. Use the button to reset the error. After the fault reset, manual mode remains active.
Network scan	Scan the network via the button if the menu does not display the status line of a drive. Use the button to abort the scan.

7.4.3 Deactivating manual mode

⚠ WARNING

⚠ **WARNING** Risk of crushing due to unintended start of the drive. The signals of the higher-level controller become effective immediately after deactivating manual mode. The drive runs with the speed that is specified by the higher-level controller.

Severe or fatal injuries.

- During deactivation, observe a sufficient safety distance to all parts driven by the motor.
- or, before deactivating manual mode, make sure that the drive is not enabled by the higher-level controller.

Deactivate manual mode by setting parameter *P1-12* to "0".

INFORMATION

The inverter briefly releases the brake when you set parameter *P1-12* to "0".

8 Service

8.1 Diagnostics with LT-BG keypad

The following table helps you with troubleshooting:

Error	Cause	Solution
Overload or overcurrent error of the unloaded motor during acceleration		• Check the star/delta terminal connection in the motor. The nominal operating voltages of motor and MOVIFIT® basic must match. The delta connection always yields the lower voltage of a multi-voltage motor.
The motor axis is not rotating	Overload or overcurrent	• Check whether the rotor of the motor is blocked. • Make sure that the mechanical brake is released (if installed).
Display remains on "StoP"	No enable signal for the drive	• Check whether the enable signal from the higher-level controller is present. • Make sure the M12 connectors are plugged in correctly. • Check the parameter *P1-12* for terminal control/ manual mode. • Press the <Start> key while in manual mode. The line voltage must correspond with the specified values.
The drive does not start in very cold environments	Ambient temperature below −10 °C	• Provide for a heat source that keeps the ambient temperature of the drive above -10 °C.
Drive does not run properly in vector mode.		• You must set the parameters *P1-07*, *P1-08*, and *P1-09* according to the data on the motor nameplate before starting the auto-tune process. • Start auto-tune by setting *P4-02* = "1".

8.2 Error list of MOVIFIT® basic

The LT-BG keypad displays the errors that occurred at the MOVIFIT® basic drive. In addition, you can read out the 4 latest errors from parameter *P1-13 error protocol* on the PC.

Error code	Error	Solution
P-dEF	The factory-set parameters were loaded.	Press the <Stop> key. The drive can now be configured for the desired application.
O-I hO-I	Overcurrent at inverter output to the motor. Motor overload. Overtemperature at the heat sink of the inverter.	• Check motor and connection cables for phase short circuits or ground faults. • Check load for blocking, stalling, or shock loads. • Make sure that the parameters *P1-07*, *P1-08*, and *P1-09* were set correctly according to the motor nameplate. • For vector control (*P4-01* = "0" or "1"): Check motor power factor in *P4-05*. • Make sure that the auto-tune process for the connected motor has been completed successfully. • Increase the ramp time in P*1-03*.
I_ t-trP	An inverter overload error occurs when the inverter has delivered > 100% of the nominal current for a certain time (defined in *P1-08*). The display is flashing to indicate the overload.	• Increase the acceleration ramp or reduce the motor load. • Make sure that the cable length meets the requirements. • Make sure that the parameters *P1-07*, *P1-08*, and *P1-09* were set correctly according to the motor nameplate. • In vector control mode (*P4-01* = "0" or "1"), check the motor power factor in *P4-05*. • Make sure that the auto-tune process for the connected motor has been completed successfully. • Check the load mechanically. Make sure that the load can move freely and that there are no blockages or other mechanical faults.
PS-trP	Internal output stage error	Error when enabling the drive: • Check for incorrect wiring or short circuit. • Check for phase short circuits or ground faults. Error during operation: • Check for sudden overload or overtemperature. • Provide additional space or cooling, if necessary.
O_Uo lt	DC link overvoltage	• Check whether the supply voltage is too high. • If the inverter switches off during deceleration, increase the deceleration ramp in *P1-04*.
U_Uo lt	DC link undervoltage	Occurs routinely when switching off the inverter. • Check line voltage if this occurs while the drive is running.
O-t	Overtemperature at heat sink	• Check inverter cooling. • Provide additional space or cooling, if necessary.
U-t	Undertemperature	Occurs at an ambient temperature below -10 °C. • Increase the ambient temperature to above -10 °C before switching on the inverter.
th-Flt	Faulty thermistor at heat sink.	• Contact the SEW-EURODRIVE Service.
P-LOSS	Input phase failure error	One input phase failed in an inverter designed for operation on a three-phase system.

Error code	Error	Solution
Ph-lb	Phase asymmetry	Asymmetry of > 3% occurs for more than 30 s in the supply input voltage. • Check input voltage and fuses.
dAtA-F	Internal memory error	• Parameters not saved. • Factory settings loaded. • Try again. • If this problem occurs repeatedly, contact the SEW-EURODRIVE service.
At-FO1	Auto-tune error	The measured stator resistance of the motor fluctuates between the phases. • Make sure that the motor is connected correctly and without error. • Check the winding for correct resistance and symmetry.
At-F02		The measured stator resistance of the motor is too high. • Make sure that the motor is connected correctly. • Check whether the power rating of the motor corresponds with the power rating of the connected inverter.
At-F03		The measured motor inductivity is too low. • Make sure that the motor is connected correctly.
At-F04		The measured motor inductivity is too high. • Make sure that the motor is connected correctly. • Check whether the power rating of the motor corresponds with the power rating of the connected inverter.
At-F05		The measured motor parameters are contradictory. • Make sure that the motor is connected correctly. • Check whether the power rating of the motor corresponds with the power rating of the connected inverter.

8.3 Inspection/Maintenance

The MOVIFIT® basic unit does not require maintenance. SEW-EURODRIVE does not prescribe any inspection or maintenance work for the MOVIFIT® basic unit.

Exception: In case of long-term storage, observe the notes in chapter "Service" / Extended storage".

8.4 Shutdown

To shut down the drive, deenergize the MOVIFIT® basic unit using appropriate measures.

⚠ WARNING

Electric shock due to charged capacitors

Severe or fatal injuries.

- Observe a minimum switch-off time of 10 minutes after disconnecting the power supply.

8.5 Storage

Observe the following instructions when shutting down or storing the MOVIFIT® basic unit:

- If you shut down and store the MOVIFIT® basic unit, you must close open cable entries and cover contacts with protective caps.
- Make sure that the unit is not subject to mechanical impact during storage.

Observe the notes on storage temperature in the "Technical Data" chapter.

8.6 Extended storage

MOVIFIT® basic is equipped with capacitors which are subject to aging effects when de-energized.

The capacity and impedance of the built-in capacitors of MOVIFIT® basic do not change significantly during extended storage. However, the leakage current of the capacitors slowly increases.

If the unit is stored for a long time, connect it to the supply system voltage for at least 5 minutes every 2 years. Otherwise, the unit's service life may be reduced.

8.6.1 Procedure if maintenance has been neglected

When maintenance has been neglected, SEW-EURODRIVE recommends to operate the unit for 1 hour with the permitted nominal voltage at room temperature. Keep the connected motor running during the entire time. After you have completed the regeneration process, the unit can be used immediately or stored again for an extended period with maintenance.

8.7 Disposal

This product consists of:

- Aluminum
- Plastics
- Electronic components

Dispose of all components in accordance with applicable regulations!

9 Technical Data

9.1 CE marking, UL approval and C-Tick

9.1.1 CE marking

- Low voltage directive:

  The MOVIFIT® basic drive system complies with the regulations of the low voltage directive 2006/95/EC.

- Electromagnetic compatibility (EMC):

  MOVIFIT® basic units are designed for use as components for installation in machinery and systems. They comply with the EMC product standard EN 61800-3 "Variable-speed electrical drives". Provided that you comply with the installation instructions, the CE marking requirements for the entire machine/system in which they are installed are satisfied on the basis of the EMC directive 2004/108/EC. For detailed information on EMC compliant installation, refer to the publication "Electromagnetic Compatibility in Drive Engineering" from SEW-EURODRIVE.

CE

The CE mark on the nameplate indicates conformity with the Low Voltage Directive 2006/95/EC and the EMC Directive 2004/108/EC.

9.1.2 UL approval (in preparation)

c UL US LISTED

UL and cUL approval for the MOVIFIT® basic unit series is in preparation.

9.1.3 C-Tick (in preparation)

C-Tick approval for the MOVIFIT® basic unit series is in preparation.

C-Tick certifies conformity with ACA (Australian Communications Authority) standards.

9.2 MOVIFIT® basic with AS-Interface

MOVIFIT® basic type Part number		MBF07A-K1-A1 1 825 245 1	MBF15A-K1-A1 1 825 248 6	MBS4DA-K1-A1 1 825 252 4	MBS4RA-K1-A1 1 825 250 8
		Inverter		Dual motor starter	Reversing starter
Apparent output power at V_{line} = AC 380 - 480 V	S_N	1.8 kVA	2.8 kVA	6.9 kVA	6.9 kVA
Supply voltages Permitted range	V_{line}	AC 3 x 380 V –10% – AC 480 V +10%			
Line frequency	f_{line}	50 – 60 Hz ± 10%			
Nominal line current (at V_{line} = AC 400 V)	I_{line}	AC 2.9 A	AC 5.4 A	AC 10 A	AC 10 A
Output voltage	V_O	0 – V_{line} Output is not short-circuit proof		V_{line} Output is not short-circuit proof	
Output frequency Resolution Operating point	f_o	2 – 120 Hz 0.01 Hz 400 V at 50 Hz		f_{line} – –	
Rated output current	I_N	AC 2.2 A	AC 4.1 A	AC 2 x 5.0 A	AC 10.0 A
Motor power S1	P_{Mot}	**0.75 kW** 1.0 HP	**1.5 kW** 2.0 HP	**2 x 2.2 kW** 2 x 3.0 HP	**4.0 kW** 5.4 HP
PWM frequency		4 (factory setting)/8/16 kHz		–	
Current limitation (Output is not short-circuit proof)	I_{max}	motor: 150%, 60 s Regenerative: 150%, 2 s		None	
Max. motor cable length		3 m unshielded 10 m shielded		10 m unshielded	
Interference immunity		Meets EN 61800-3			
Interference emission		Meets category C3 according to EN 61800-3			
Ambient temperature	ϑ_A	-10 – +40 °C P_N reduction: 3% I_N per K to max. 60 °C			
Climate class		EN 60721-3-3, class 3K3			
Storage temperature[1)]		-30 to +85 °C (EN 60721-3-3, class 3K3)			
Maximum permitted vibration and shock load		according to EN 50178			
Degree of protection		IP54 (MOVIFIT® basic housing closed and all plug connections sealed).			
Duty type		S1 (EN 60149-1-1 and 1-3)			
Cooling type (DIN 41751)		Self-cooling			
Installation altitude		h ≤ 1000 m: No reduction h > 1000 m: I_N reduction by 1% per 100 m h > 2000 m: V_{line} reduction by AC 6 V per 100 m, Overvoltage class 2 according to DIN 0110-1 h_{max} = 4000 m Also see chapter "Installation altitudes above 1000 m asl" (page 17)			
Required preventive measures		Grounding the unit			
Weight		3.3 kg		3.0 kg	2.7 kg
Dimensions	W x H x D	See chapter "Dimension drawings"			
Brake rectifier		BG brake rectifier for SEW brakemotors Brake voltage = supply voltage V_{line}			

MOVIFIT® basic type	MBF07A-K1-A1	MBF15A-K1-A1	MBS4DA-K1-A1	MBS4RA-K1-A1
Part number	1 825 245 1	1 825 248 6	1 825 252 4	1 825 250 8
	Inverter		Dual motor starter	Reversing starter
Control input	Connection of the AS-Interface data line via M12 plug connector			
Control functions	DO0 – DO3, see chapter "Functions of MOVIFIT® basic with AS-Interface"			
Signaling functions	DI0 – DI3, see chapter "Functions of MOVIFIT® basic with AS-Interface"			
Sensor connections	DI2 binary input sensor 2 DI3 binary input sensor 3			
Sensor inputs	PLC compatible according to EN 61131-2, sampling time ≤ 8 ms R_i about 3.0 kΩ I_E about 10 mA			
Signal level	+15 – +30 V "1" -3 – +5 V "0"			
Maximum sensor cable length	15 m			
AS-Interface				
Protocol variant	AS-Interface binary slave with a S-7.F profile "four bit I/O mode slave"		AS-Interface binary slave with S-7.A.E profile "4 I/3O AB slave"	
AS-Interface profile	S-7.F		S-7.A.E	
I/O configuration	7_{hex}		7_{hex}	
ID code	F_{hex}		A_{hex}	
ext. ID code 2	E_{hex}		E_{hex}	
ext. ID code 1	F_{hex}		F_{hex}	
Address	1 – 31 Factory setting 0 Can be changed as often as required		1A – 31A, 1B – 31B (AB slave) Factory setting 0 Can be changed as often as required	

1) If the unit is stored for a long time, connect it to the supply system voltage for at least 5 minutes every 2 years. Otherwise, the unit's service life may be reduced.

9.3 MOVIFIT® basic with binary control

MOVIFIT® basic type Part number		MBF07A-B1-A1 1 825 247 8	MBF15A-B1-A1 1 825 249 4	MBS4DA-B1-A1 1 825 253 2	MBS4RA-B1-A1 1 825 251 6
		Inverter		Dual motor starter	Reversing starter
Apparent output power at V_{line} = AC 380 - 480 V	S_N	1.8 kVA	2.8 kVA	6.9 kVA	6.9 kVA
Supply voltages Permitted range	V_{line}	AC 3 x 380 V –10% – AC 480 V +10%			
Line frequency	f_{line}	50 – 60 Hz ± 10%			
Nominal line current (at V_{line} = AC 400 V)	I_{line}	AC 2.9 A	AC 5.4 A	AC 10 A	AC 10 A
Output voltage	V_O	0 – V_{line} Output is not short-circuit proof		V_{line} Output is not short-circuit proof	
Output frequency Resolution Operating point	f_o	2 – 120 Hz 0.01 Hz 400 V at 50 Hz		f_{line} – –	
Rated output current	I_N	AC 2.2 A	AC 4.1 A	AC 2 x 5.0 A	AC 10.0 A
Motor power S1	P_{Mot}	**0.75 kW** 1.0 HP	**1.5 kW** 2.0 HP	**2 x 2.2 kW** 2 x 3.0 HP	**4.0 kW** 5.4 HP
PWM frequency		4 (factory setting)/8/16 kHz		–	
Current limitation (Output is not short-circuit proof)	I_{max}	motor: 150%, 60 s Regenerative: 150%, 2 s		None	
Maximum motor cable length		3 m unshielded 10 m shielded		10 m unshielded	
Interference immunity		Meets EN 61800-3			
Interference emission		Meets category C3 according to EN 61800-3			
Ambient temperature	ϑ_A	-10 – +40 °C P_N reduction: 3% I_N per K to max. 60 °C			
Climate class		EN 60721-3-3, class 3K3			
Storage temperature[1)]		-30 to +85 °C (EN 60721-3-3, class 3K3)			
Maximum permitted vibration and shock load		according to EN 50178			
Degree of protection		IP54 (MOVIFIT® basic housing closed and all plug connections sealed).			
Duty type		S1 (EN 60149-1-1 and 1-3)			
Cooling type (DIN 41751)		Self-cooling			
Installation altitude		h ≤ 1000 m: No reduction h > 1000 m: I_N reduction by 1% per 100 m h > 2000 m: V_{line} reduction by AC 6 V per 100 m, Overvoltage class 2 according to DIN 0110-1 h_{max} = 4000 m Also see chapter "Installation altitudes above 1000 m asl" (page 17)			
Weight		3.3 kg		3.0 kg	2.7 kg
Dimensions	W x H x D	See chapter "Dimension drawings"			
Required preventive measures		Grounding the unit			
Brake rectifier		BG brake rectifier for SEW brakemotors Brake voltage = supply voltage V_{line}			

MOVIFIT® basic type	MBF07A-B1-A1	MBF15A-B1-A1	MBS4DA-B1-A1	MBS4RA-B1-A1
Part number	1 825 247 8	1 825 249 4	1 825 253 2	1 825 251 6
	Inverter		Dual motor starter	Reversing starter
4 binary inputs	Isolated via optocoupler; PLC compatible (EN 61131-2) $R_i \approx 3.0\ k\Omega$, $I_E \approx 10$ mA, sampling interval ≤ 8 ms			
Signal level	+13 – +30 V = "1", contact closed -3 – +5 V = "0", contact open			
Control functions	DI0 – DI3, see chapter "Functions of MOVIFIT® basic with binary control"			
2 binary outputs	PLC-compatible to EN 61131-2, interference-voltage and short-circuit proof			
Signal level	+15 V – +30 V "1" –3 V – +5 V "0"			
Total current	Max. 100 mA			
Signaling functions	DO0 – DI1, see chapter "Functions of MOVIFIT® basic with binary control"			

1) If the unit is stored for a long time, connect it to the supply system voltage for at least 5 minutes every 2 years. Otherwise, the unit's service life may be reduced.

9.4 Accessories

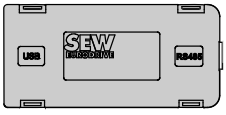
9.4.1 Operator panel

LT-BG

Type	LT-BG-00
Part number	1 820 864 9
Function	Operator panel
Connection	with 3 m cable and RJ11 plug connector for connection to the X50 diagnostic interface
Degree of protection	IP54 (EN 60529) when installed in a control cabinet door IP20 (EN 60529) without mounting
Ambient temperature	0 – +50 °C
Storage temperature	0 – +60 °C

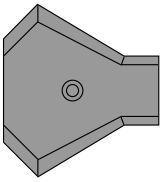
9.4.2 Accessories for PC connection

USB11A



Type	USB11A
Part number	0 824 831 1
Function	USB – RS -485 interface adapter
Scope of delivery	– USB11A interface adapter – USB cable – Cable with RJ10 – RJ10 plug connectors

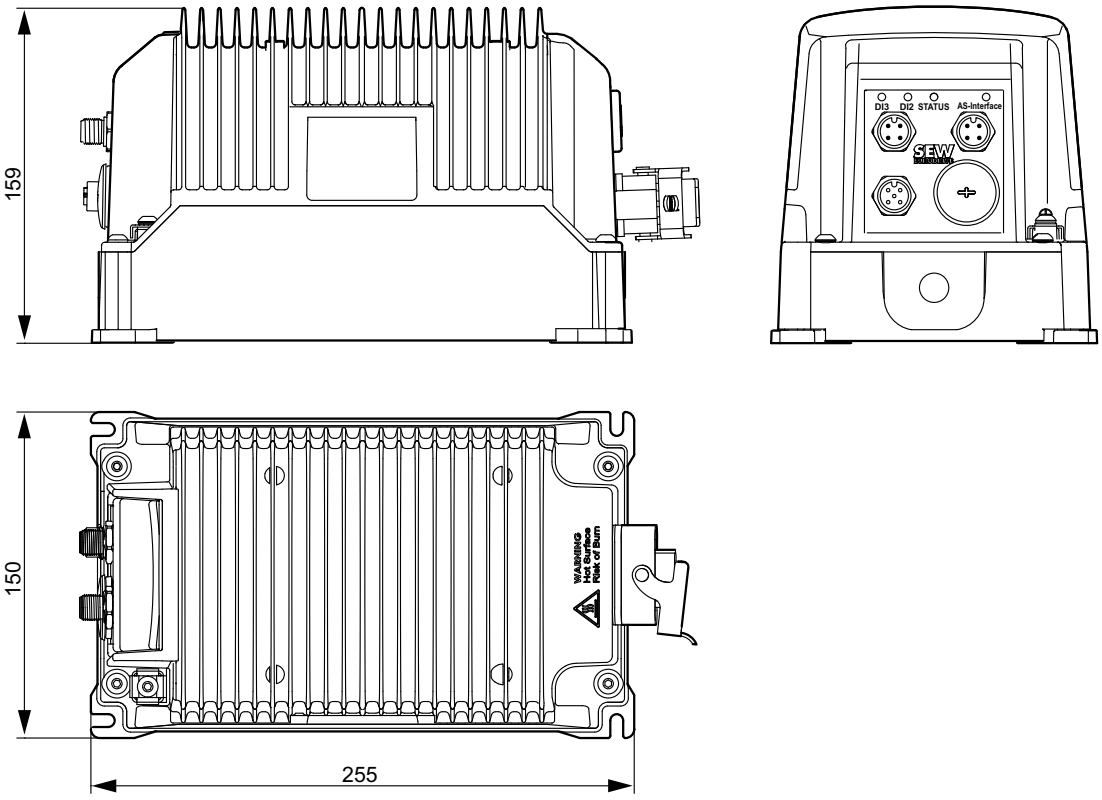
OP LT 003 C



Type	OP LT 003 C
Part number	1 824 368 1
Function	RJ10 – RJ45 adapter DC 24 V -> DC 5 V voltage converter
Scope of delivery	– OP LT 003 C adapter – Cable with RJ45 – RJ11 plug connectors

9.5 Dimension drawings

9.5.1 Dimension drawing of MOVIFIT® basic



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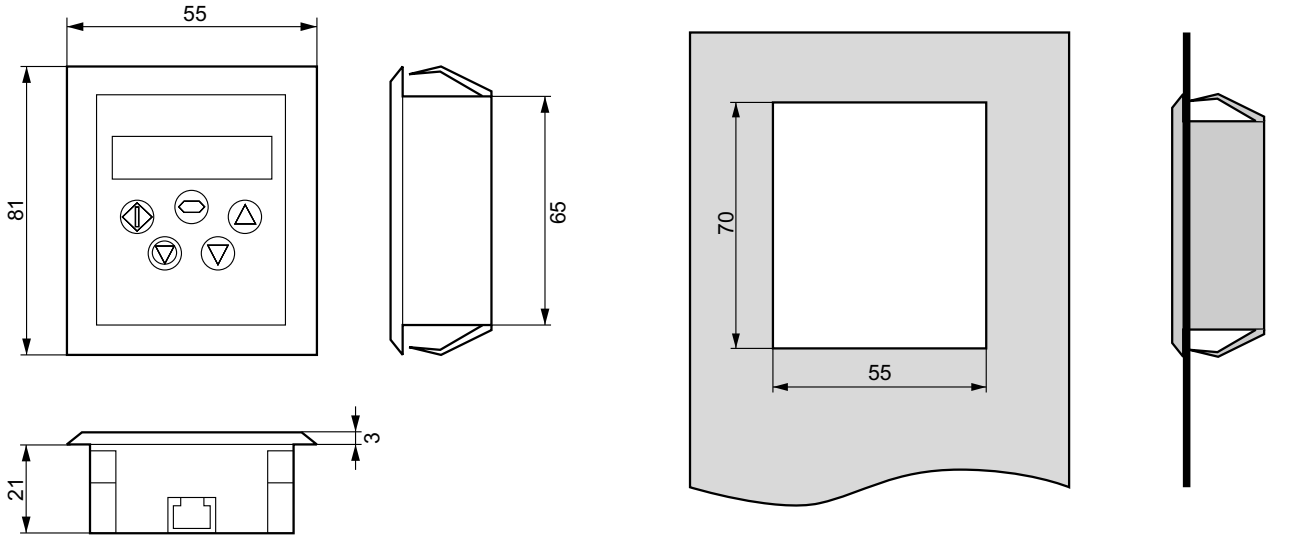
9.5.2 Dimension drawing of LT-BG keypad



Recess
for control cabinet installation

2689204875

The keypad meets the requirements of IP54 when it is installed correctly.

10 Declaration of Conformity

3947025035

EC Declaration of Conformity

SEW EURODRIVE

901120011

SEW-EURODRIVE GmbH & Co KG
Ernst-Blickle-Straße 42, D-76646 Bruchsal

declares under sole responsibility that the

units of the series	**MOVIFIT® basic**	**MBF..** **MBS..**
are in conformity with		
Low Voltage Directive	**2006/95/EC**	
EMC Directive	**2004/108/EC**	**4)**
Applied harmonized standards	**EN 61800-5-1:2007** **EN 60204-1:2006** **EN 61800-3:2007** **EN 55011:2007**	

4) According to the EMC Directive, the listed products are not independently operable products. EMC assessment is only possible after these products have been integrated in an overall system. The assessment was verified for a typical system constellation, but not for the individual product.

Bruchsal	16.05.11	Johann Soder	
Place	Date	Managing Director Technology	a) b)

a) Authorized representative for issuing this declaration on behalf of the manufacturer
b) Authorized representative for compiling the technical documents

11 Address List

Germany			
Headquarters **Production plant** **Sales**	**Bruchsal**	SEW-EURODRIVE GmbH & Co KG Ernst-Blickle-Straße 42 76646 Bruchsal P.O. box Postfach 3023 • 76642 Bruchsal	Phone +49 7251 75-0 Fax +49 7251 75-1970 http://www.sew-eurodrive.com sew@sew-eurodrive.com

France			
Production plant **Sales** **Service**	**Haguenau**	SEW-USOCOME 48-54 route de Soufflenheim B. P. 20185 F-67506 Haguenau Cedex	Phone +33 3 88 73 67 00 Fax +33 3 88 73 66 00 http://www.usocome.com sew@usocome.com

The Netherlands			
Assembly plant **Sales** **Service**	**Rotterdam**	VECTOR Aandrijftechniek B.V. Industrieweg 175 NL-3044 AS Rotterdam Postbus 10085 3004 AB Rotterdam, Netherlands	Phone +31 10 4463-700 Fax +31 10 4155-552 http://www.vector.nu info@vector.nu

Austria			
Assembly plant **Sales** **Service**	**Vienna**	SEW-EURODRIVE Ges.m.b.H. Richard-Strauss-Strasse 24 A-1230 Wien	Phone +43 1 617 55 00-0 Fax +43 1 617 55 00-30 http://www.sew-eurodrive.at sew@sew-eurodrive.at

Switzerland			
Assembly plant **Sales** **Service**	**Basle**	Alfred Imhof A.G. Jurastrasse 10 CH-4142 Münchenstein bei Basel	Phone: +41 61 4171717 Fax: +41 61 4171700 http://www.imhof-sew.ch info@imhof-sew.ch

Spain			
Assembly plant **Sales** **Service**	**Bilbao**	SEW-EURODRIVE ESPAÑA, S.L. Parque Tecnológico, Edificio, 302 E-48170 Zamudio (Vizcaya)	Phone +34 94 43184-70 Fax +34 94 43184-71 http://www.sew-eurodrive.es sew.spain@sew-eurodrive.es

Index

A

Accessories....11
Additional documentation....8
AS-Interface
  Connection....29
  Input/output bits....49
  Technical data....64

B

Binary control signals....50
Binary inputs DI0+DI1, X11....31
Binary inputs DI2+DI3, X12....31
Binary outputs DO0+DO1, X13....32

C

Cable seal....11
CE marking....62
Changing the setpoint speed (manual operation)....53, 56
Conductor cross section....18
Connection
  AS-Interface, X21....29
  Binary inputs DI0+DI1, X11....31
  Binary inputs DI2+DI3, X12....31
  Binary outputs DO0+DO1, X13....32
  Control unit....28
  Diagnostic interface X50....30, 32
  For MOVIFIT® basic with AS-Interface....29
  For MOVIFIT® basic with binary control....31
  Line cable....19
  LT-BG keypad....33
  Motor....24, 25
  Motor cable....26
  PC....34
  PE....16
  Power bus....19
  Safety notes....8
  Sensor 2, X22....29
  Sensor 3, X23....30
  Wiring diagram....21
Connection diagram....18
Contact module
  Connection....20
Control signals of AS-Interface master....49
Cooling air....13
Copyright....6
C-Tick....62

D

Data transfer
  MOVIFIT® basic with AS-Interface....49
  MOVIFIT® basic with binary control....50
Derating....17
Designated use....7
Diagnostic interface X50, connection....30, 32
Diagnostics
  With LT-BG keypad....58
Dimension drawing
  LT-BG keypad....67
  MOVIFIT® basic....67
Disposal....61
Documentation, additional....8
Dual motor starter....10

E

Earth-leakage circuit breaker....15
Electrical installation....15
Embedded safety notes....5
EMC-compliant installation....17
Enabling the drive (manual mode)....53, 56
Error list....59
Error reset (manual operation)....53, 56
Exclusion of liability....6
Extended storage....61

F

FieldPower® contact module....20
Functions
  MOVIFIT® basic with AS-Interface....49
  MOVIFIT® basic with binary control....50
Fuse....18

H

Hoist applications....8
Hole pattern....14

I

Input/output signals of binary control....50

Installation 8
Earth-leakage circuit breaker 15
Electrical 15
Line contactor 15
Mechanical 13
MOVIFIT® basic 14
Installation altitude 17
Installation dimensions 14
Installation instructions 15
Insulation displacement connector 22
Inverter 10

L

LEDs, description 51
Line contactor 15
LT shell
Inverter manual mode 56
MOVIFIT® basic manual mode 55
MOVIFIT® basic parameterization 44
LT-BG
Connection 33
Description 42
Diagnostics 58
Dimension drawing 67
Error list 59
Inverter manual operation 53
Keys 42
Manual operation 53
Operating displays 52
Parameterization of MOVIFIT® basic 43
Recess for control cabinet installation 67
Technical data 66

M

Maintenance 61
Manual mode with LT Shell
Deactivation 57
Manual mode with LT shell
Activation 55
Manual mode with with LT shell
Inverter manual operation 56
Manual operation
With LT-BG keypad 53
With the PC 55
Manual operation with LT-BG
Inverter manual operation 53
Manual operation with LT-BG keypad
Activation 53
Deactivation 54
Mechanical installation 13
Motor cable 26
Mounting position 14

N

Nameplate 12
Neglected maintenance 61
Network scan (manual mode) 56
Notes
Designation in the documentation 5

O

Operating displays
LEDs 51
LT-BG keypad 52
Operation
Safety notes 9
Other applicable documentation 8

P

Parameter description
MOVIFIT® basic inverter 45
Parameter list
MOVIFIT® basic inverter 45
Parameterization
With LT-BG keypad 42
With the PC (LT shell software) 44
PC, connection 34
PE connection 16
Product names 6
Protection devices 17
Protective cover 35

R

Requirements for startup 36
Reversing starter 10
Rights to claim under limited warranty 6

S

Safe disconnection 9
Safety functions 8

Safety notes 7
Designation in the documentation....5
Electrical connection 8
General information 7
Installation....8
Operation 9
Storage 8
Structure of the embedded safety notes 5
Structure of the section-related safety notes 5
Transportation....8
Section-related safety notes 5
Sensor 2, connection 29
Sensor 3, connection 30
Shut down 61
Shutdown 61
Signal words in the safety notes 5
Software LT shell
MOVIFIT® basic manual mode 55
MOVIFIT® basic parameterization 44
Startup
MOVIFIT® basic inverter 37, 39
Notes....35
Requirements....36
Storage 8, 61
Strain relief....22
Stripping tool 11, 20

T

Target group 7
Technical data
CE marking 62
C-Tick 62
LT-BG keypad....66
MOVIFIT® basic with AS-Interface 63
MOVIFIT® basic with binary control....65
UL approval 62
Topology 18
Trademarks....6
Transportation....8
Type designation 12

U

UL approval 62
UL compliant installation (in preparation) 17
Unit structure 10

V

Variants....10

X

X11, Connection of binary inputs DI0+DI1....31
X12, Connection of binary inputs DI2+DI3....31
X13, binary outputs DO0+DO1 32
X21, AS-Interface connection 29
X22, sensor 2 connection 29
X23, sensor 3 connection 30
X50, diagnostic interface 30, 32

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